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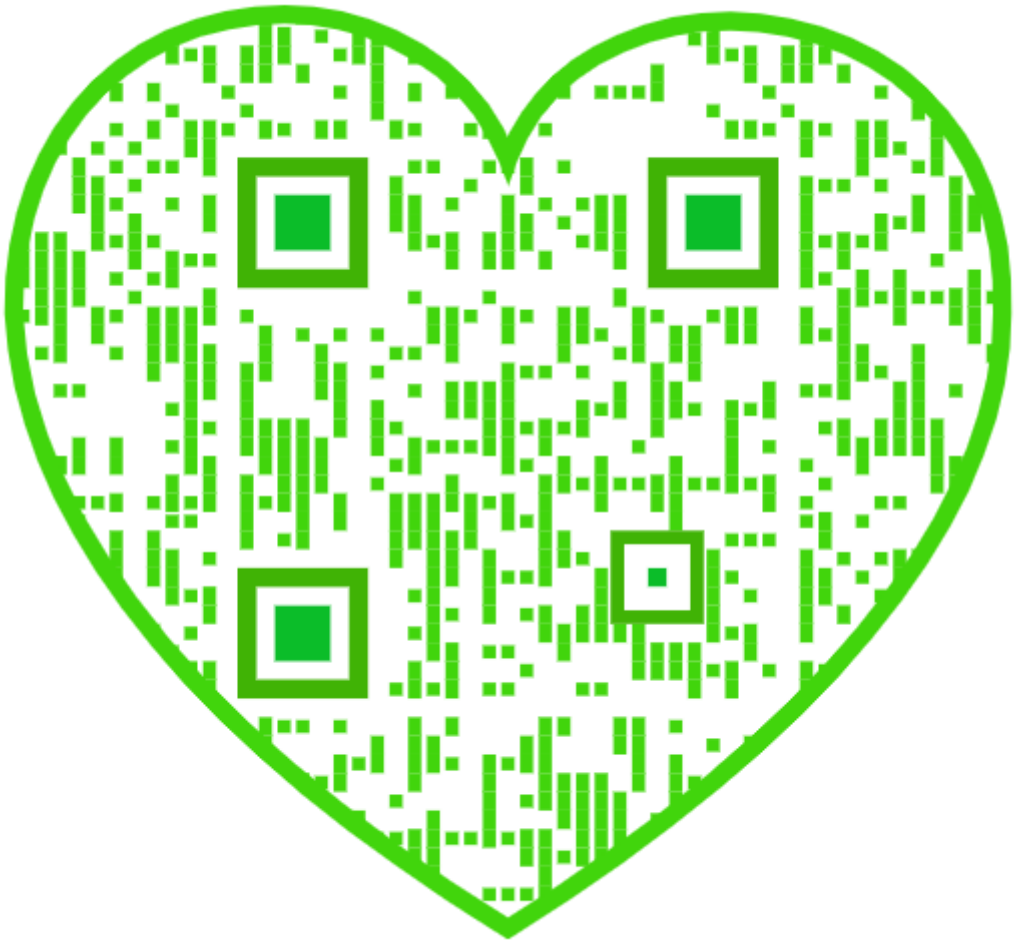

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VOLUME FORTY.

Another year has come and gone all too swiftly, and has yielded to bee-keepers, as to all in general, its successes and failures. Although the post of Editor is anything but an enviable one, it is with considerable pleasure we take our seat once more in the editorial chair and resume our duties at the beginning of 1912. The commencement of the fortieth volume carries the mind backwards thirty-nine years, to the time when bee-keeping was in a very undeveloped condition, and only very few persons—ourselves amongst the number—kept bees in moveable comb hives. Bees were rarely referred to in the press, and books about them were practically beyond the reach of most bee-keepers, so that the crude methods handed down from father to son by old-time skeppists were almost the only means of obtaining any knowledge of bee-keeping. The correspondence of Mr. Woodbury and one or two others in the *Cottage Gardener*, and Mr. C. N. Abbott in the *English Mechanic*, induced the latter to start the BRITISH BEE JOURNAL, nor is it too much to say that the real march forward in this country, so far as bee-keeping is concerned, began with its birth in May, 1873, thirty-nine years ago. The establishment of a journal entirely devoted to bees and the interchange of thought among bee-keepers created a bond of union, which led bee-men to talk of each other for the first time as "brother bee-keepers." What a contrast the thirty-nine years present to us! The "B.B.J." started as a monthly at 10s. 6d. per annum, which was reduced to 6d. per copy, a price felt too high to meet the need of all classes. In 1883 it came out fortnightly at 3d., and in 1886 it was issued as a weekly at 2d., and finally, when it came into our hands we realised the long-cherished wish by giving bee-keepers a journal of their own at one penny per copy. It is with no small satisfaction that we realise that the journal has now appeared regularly every week for twenty-five years without a single break. If we contrast the first and last volumes of the "B.B.J." we will see the great advance made. The first volume contained 199 pages, and cost 10s. 6d.; the last had 514 pages, and the cost was only 4s. 4d. So far as the JOURNAL is concerned, the retrospect is thoroughly satisfactory to us as editors. We can point to its work and teachings, and aver without egotism that it has ever been progressive, practical and sound, and has thus earned a leading position amongst bee journalism. It is the oldest bee paper in the British Empire, and holds the unique position of being the only paper in the world devoted to the subject that is published weekly. Many bee-papers have come and gone since the "B.B.J." set out on its maiden trip in 1873, and to-day it, and our monthly, the *Bee-keepers' Record*, are the only bee-papers published in Great Britain. We number amongst our contributors the most experienced and successful bee-keepers in the country, and are proud of our able staff of writers, all willing workers in the cause, and we take this opportunity of expressing our gratitude for their valuable aid in making the "B.B.J." instructive and interesting.

Bee-keepers who wish to know what is going on in the bee-keeping world, both at home and abroad, appreciate the "B.B.J.," as it keeps its readers well informed of all progress both in the science and practice connected with bees, frequently long before mention is made in other papers. For instance, on September 21st we gave a full report of the important paper on "Nosema Disease and Dysentery" read by Dr. Hein at the Conference of German, Austrian, and Hungarian Bee-Keepers held on August 8th. It was only in December that this paper was reported in any of the Continental papers. Our policy has brought its rich reward, for our readers are numbered in all parts of the world, and the letters of appreciation which we are constantly receiving would take up too much of our room to print, but we take this opportunity of thanking the writers. As advertising media our papers are well known, and tons of honey are sold yearly through advertisements bringing the producer and consumer into direct communication with each other.

We are grateful for past favours, and we confidently look for an increased support in order to enable the BEE

JOURNAL to retain its position of being the leading and best paper relating to bees and bee-keeping.

The past season of 1911, the Coronation year, has been a satisfactory one as far as regards the harvest, and will long be remembered for the abundant supply of uniformly good honey and the remarkable absence of honey-dew, which frequently discolours so much of the honey in this country. The only gloomy aspect was the prevalence of that disease which has been called the "Isle of Wight" disease. Although it has not been quite so prevalent as in the previous years, there are still districts where it is causing serious havoc. Nor is this disease confined to this country, for we find it spread over many parts of the Continent of Europe and even in America and Australia. Now that scientists, not only in this country, but also on the Continent of Europe, are investigating the matter it is hoped that it will not be long before a remedy may be found. The spread of the disease, however, emphasises the necessity there is for legislation, and it is satisfactory to know that the committee appointed by the B.B.K.A. has made considerable progress with regard to a Bill which it is hoped will be satisfactory to bee-keepers.

Through the influence of the B.B.K.A., Government recognition of the industry has been secured and a grant of £850 has been obtained for furthering instruction in bee-keeping. Arrangements have been made for an experimental apiary at the Zoological Gardens in London, where lectures and courses of instruction will be given. Lecturers will also be sent out to promote County Associations, and to assist in the organisation of pioneer lectures and demonstrations of an introductory type designed to interest country audiences in the business of bee-keeping. This will not only benefit the industry but should be a great help to the Associations affiliated with the B.B.K.A. We are pleased that so many of the representatives of the affiliated Associations attend the Council meetings and take an intelligent interest in the work the parent Association is doing for bee-keepers. Such co-operation cannot be but for the good of the industry, as the County Associations, whose representatives can now vote at the Council meetings, have a voice in the management of the B.B.K.A., and can keep it in touch with the requirements of their Associations.

The conversaziones as usual have attracted a large number of bee-keepers, and in addition to the interesting bioscope pictures of bee life shown by Mr. Bee Mason, papers have been read by Dr. Malden on the "Isle of Wight" disease, by Mr. O. R. Frankenstein on "Marketing Honey," and by Mr. L. Snelgrove on "Re-queening." The discussions were instructive, the enthusiasm at the meetings was clearly demonstrated, and as over 120 members were present at the last meeting it showed that the interest in the subject is well maintained.

The principal additions to the literature of bee-keeping during the year have been "Der Bau der Biene," by Dr. Zander; a new edition of the "Australasian Bee Manual," by I. Hopkins; "Biologie der Biene," by Dr. H. Stadler; "The Bee-keepers' Companion," by S. S. Abbott; "Bees and Honey," by T. G. Newman and C. P. Dadant; and a Coronation edition of the "British Bee-keepers' Guide Book," the 75th thousand, has also appeared.

Among those who have passed away during the year we may mention Mr. C. Dunn Gardner, one of the most successful bee-keepers we had in this country. Abroad the most notable losses were Mr. D. A. Jones in Canada, Mr. W. Z. Hutchinson in the United States of America, and Baron Bela von Ambrozy in Hungary.

As to the future, we intend to follow the same course as heretofore, and give in the "B.B.J." everything of interest to our readers and of use to the industry, so that it may be the expositor of bee-keeping in its widest sense. The articles by Mr. Hayes on pollen, which have been so much appreciated, will be continued, as also "Useful Hints to Novices," by our junior editor, and "The Homes of the Honey Bee." We have also arranged to give views and descriptions of the establishments of manufacturers and dealers in appliances, which we hope will interest our readers.

There are a great many bee-keepers who never write on bee matters at all although well able to do so: these we invite to join in the correspondence. We wish to make the "B.B.J." as instructive as possible, and we would remind all that there can be no intelligent practice of bee-keeping unless it is founded on correct theory, and to get this requires comparison and interchange of views with the most successful workers. Every number of the journal contains something of value contributed by our leading bee-keepers, which frequently enables the reader to save more than the cost of a whole year's subscription, so that no one who wishes to succeed can afford to do without the "B.B.J."

In conclusion, we hope that 1912 may be especially marked as a year of progress and advance in the industry, and while hoping that the honey season may be as good as the last, we wish our readers a very happy New Year.

NECTAR PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(*Continued from page* 434.)

No. 13. The Willow Herb (*Epilobium hirsutum E. angustifolium*).

Nat. Order. *Onagraceæ.*

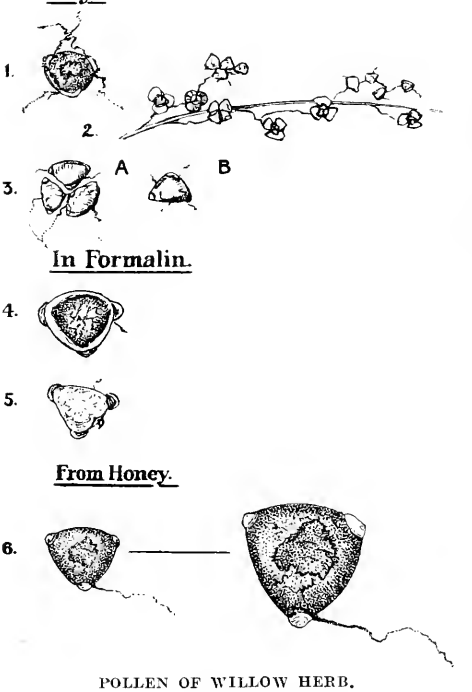
There are numerous species of Epilobium, but I only intend dealing with the two most abundant and best known; and will take *E. hirsutum* first, as it is the most common species, being abundant over almost the whole of England, although I understand it is rarely met with in Scotland. It may generally be found by the sides of streams in osier beds, woods, and on any low-lying damp ground. The generic name Epilobium is derived from two Greek words, *epi* (upon) and *lobos* (a lobe or pod), so-called from the flowers having the appearance of being seated on the top of the pod or seed vessel.

The specific title — *hirsutum* — is from a Latin word meaning rough or hairy; the stems and leaves of this plant being covered with soft, short hairs.

In this locality it is called "codlins and cream," but why, I am unable to say, unless it is that some have thought the odour of its flowers or leaves resembled that dainty. It is probably best known as the "Great Willow Herb," clearly from the resemblance of its leaves to the foliage of Willows.

It has a perennial root, the stems springing from it being strong, and they often attain a height of about 4ft. The leaves are long and narrow, serrated at the edges. The flowers, owing to their large size, are a striking feature. The petals are four in number, and mostly of a light purple colour, but there is also a variety having pure white flowers. The calyx is split into four segments, while the style in the centre of the flower is divided at its extremity into four stigmas, which, with the eight surrounding white stamens, are very prominent. The capsule containing the seeds is roughly quadrangular when cut across, which divides, opens, and curls back to the base as the seeds ripen, liberating a fluffy mass, which are seeds each having a hairy tuft at the bottom, so that they may be carried away by the wind. It flowers during July and August.

E. angustifolium is one of the most beautiful of the species; the flowers are much larger than *E. hirsutum*, of a deeper colour, and arranged in long terminal racemes or sprays. This species is, I believe, very common in Scotland. It is generally found in moist woods, though it will grow on waste ground, and I have seen it in profusion on a plot of ground that has been standing idle for some time in the heart of the city of Nottingham. It is so decorative that it is frequently grown in gardens, and is commonly known as the Rose Bay, or French Willow.



POLLEN OF WILLOW HERB.

These Willow Herbs are considered to be good nectar-producing flowers, and where they are plentiful should form a good source of supply, as they have been proved to be in America, where patches acres in extent abound.

The pollens of all the species—there being more than the two enumerated—are identical, and are interesting, seeing that they are produced in a different form from any we have yet considered. They are amongst what are known as the tetrads—like the heather (see page 304, vol. 39)—that is, they are produced in fours; but, unlike the heather, they are *not* enclosed in a mother cell—at least I have not been able to trace one for the four alone—but they are attached by an extremely thin filament to and along a stronger or main filament, as shown at No. 2, where some will be seen *in situ* and others separated. No. 3 shows the arrangement of the four grains. The three grains A form the base, with the fourth B (shown separate at side) placed on the top of the junction of the three, in the same position as it occupies by the side. No. 1 gives a

separate grain with the filament attachments. The grains are much larger than any we have before considered, and measure from apex to apex about $\frac{4}{1000}$.

The filaments come from the anthers with the pollen grains, and this causes them to adhere to each other in large masses, and as a result the bee cannot pack them so neatly on her legs as she can separate grains. The Evening Primrose (*Enothera biennis*) has a similar arrangement, and I have seen bees leaving this flower having on each hind leg a trail of pollen considerably longer than the leg itself, and enter the hive, like some lady with a long flowing dress. If this grain is kept in a weak solution of formalin, the fovilla contracts and the pellicle is seen clearly separated away from it (as at No. 4). In No. 5 is seen a pellicle emptied of its fovilla, and No. 6 shows a grain taken from honey, where it appears more dense than in any other medium. It will be noticed that it undergoes very little change in form. By transmitted light its colour is of a dull yellow, but by reflected light it is almost white.

I have only given one enlargement, for being a large pollen grain the usual enlargement is sufficient to make it plain.

(*To be continued.*)

AMONG THE BEES.

CONTROLLING BEES.

By D. M. Macdonald, Banff.

I have lately been consulting some ancient authorities for another purpose, and several phrases have stuck most tenaciously to my memory, which may serve as pegs on which to hang my present discourse. As they are pregnant with the soundest wisdom, they are deserving of the fullest consideration by the newest and most up-to-date apiarists of the present time.

So far back as Virgil's time the procedure was as follows:—They first, on opening a hive, or rather turning a ruskie, or dome-shaped osier domicile, upside down, sprinkled the combs with "sweetened water." (Why! the plan was recommended in *Gleanings* just the other day as a means whereby bees could be handled even during a dearth, or by which robbing in an apiary could be checked under like circumstances; see also extract from "Australasian.") Virgil and his *confrères* had a second string to their bow, for a twin line with the above reads, "And then pursue the citizens with smoke"—just what we would do at the present time. These ancients were not indiscriminate in their use of smoke. They discriminated between the use and the *abuse* of this potent bee-controlling force. Thus Hartlib counsels the bee-keepers of his time to manipulate with "Smoak of dried cows' dung, sophisticated with sweet wort. Set them over the smoak while you can *barely count ten.*" No cruel clouds there!

Others, while believing in the efficacy of smoke, and using it in handling bees, dispensed with it unless under necessity. Thus Remnant's rule was, "Be not fearfull, but patient and gentle; and in *case of necessitie* over-rule your bees with smoake, and so you can do with them what you please." That should be a golden rule at the present time. Use smoke very sparingly, but have your smoker going well near at hand, as you may need it as a reserve force. Lawson, on the contrary, "utterly disliked" smoke. He believed in the law of love! "Bees love their friends and hate none but their enemies. They hurt not whom they know, and they know their keeper." Here is his practice in a nutshell: "Handle them leasurely and quietly, and their keeper, whom they know, may doe with them what he will without hurt." *Almost* this ancient Bee Master persuades me to become a convert to his doctrine! I call up memories of "An Old Time Bee Man," about whom I wrote in the JOURNAL over ten years ago. He never used veil, gloves, or smoke, and yet he was always the bees' master. If they did not actually *love* him, they appreciated his kind and gentle ways and actions, and reciprocated so that stings were unknown.

Southern's case might be his: "To get honey must we necessarily get stung? I say No! If you use bees properly thou needs't not fear stinging. Goe *orderly* to them, and thou shall find them gentle as sheepe." It must not be thought that stings never come our way, more than was the case with this Bee Master, who lived over 300 years ago; that he and others in his day got stung occasionally is clearly proved by the following from his "Right Ordering of Bees": "If stung, take a sage leafe, cabbage leafe, or docke leafe, rub the juice in, and the paine will soon cease." Very many bee-keepers in the present day follow out this advice, although they may never have read Southern. These and somewhat similar herbs are generally near at hand when stings come their way, and are withal as effective cures as any known. Some virtue may lie in the quick application.

Gentleness is the one single feature in controlling bees most universally recommended by ancient writers. I could quote fifty extracts where it is set down as a prime requisite, if not, indeed, as

the most essential. The late Mr. Carr preached gentleness, "a quiet and gentle, but no less firm handling"; the "Guide Book" says, "it is necessary to proceed 'cautiously and quietly'"; one of America's latest bee-books advises "gentleness, but firmness"; therefore we find the old and the new joining together in agreement over this feature as a most important requisite.

Familiarity is another feature strongly recommended by these ancients: "The bee-keeper must be no stranger to his bees. They love their keeper whom they know." Purchas was a believer in this theory. "They being used to him, he can venture among them safely." In cottage gardens do we not find hives placed almost touching on the walk leading to the front door. Bees, being accustomed to see people passing and repassing, get so familiarised with them that they count them as friends—at least they recognise that they are not enemies.

"*Experience* will make you readie," writes one, and another "Learn from experience, guided by reason." There is a quiet and gentle touch in this last that I admire. One would expect that from Butler. It calls to mind the advice, "Get knowledge, but with all thy getting, get *understanding*." How very many modern bee-keepers might profit by this advice.

Discretion is another virtue recommended by this author, who wrote so "singularly wel." He attended himself to this expressive direction, for we find him using "a hood of boultering," the first inception, I take it, of the modern bee-veil.

Grouping together a few more of the counsels of these ancients, I may end with: "No puffing or blowing," "not acting violently," "not wearing offensive apparel," "not smelling of sweat," "not running away," "not given to jerky movements," "not given to drunkenness," "not being unchaste or unclean," "not afraid of a stinging."

DEATH OF MR. JOHN VICARS.

We received with much regret the following communication from Mr. Avery, Hon. Sec., Cumberland and Westmorland B.K.A.:—

Dear Sir,—I regret to inform you of the death of Mr. John Vicars, of St. Ann's, Rainhill, Lancashire. The deceased gentleman had been in failing health for some time, and by his death bee-keepers in the North have lost a friend, who, by his support, did much to popularise the craft. Readers of your paper will remember his plucky effort in 1901 to establish a B.K.A. in Cumberland. He was successful in then starting the association which is now the Cumberland and Westmorland B.K.A., and took office as the first Hon. Secretary. Among his friends he generally referred to himself as No. 1, meaning he was the first member. Although he only held office as Hon. Secretary for one year, he continued to interest himself in and support the association very liberally. He was a vice-president, a member of the Executive Council, and an indefatigable local hon. secretary for the Eskdale district. In the latter capacity he did much to foster bee-keeping among the dwellers in the mountainous districts near his home at Boot. I believe his own apiary was the highest in the county; his residence being the nearest to the top of Scafell. A short time ago he removed to Rainhill in order that his son might be near his business, and the last time he appeared among his bee-keeping friends was when he attended the honey show at Carlisle last August. Our late friend was a thoroughly practical bee-keeper, holding third and second class B.B.K.A. certificates. He was also a member of the parent association, and a constant reader of the BEE JOURNAL and other papers devoted to the craft. Before retiring to his Cumberland home Mr. Vicars was in business in Bootle. He was a J.P., and ex-Mayor of that town. To Mrs. Vicars and her son much sympathy is extended by a large circle of bee-keeping and other friends.—G. W. AVERY.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

PARTHENOGENESIS.

[8325] Assuming the theory of parthenogenesis as applied to bees to be true, there follows a series of most peculiar facts in the pedigree of a bee, which up to the present, so far as my reading goes, have never been pointed out.

I will merely state these facts, leaving others more able than myself to point out

what significance they may have to bee-keepers who wish to study the improvement of the strain of bees they keep.

It is well known that if we trace back the pedigree of any animal breeding according to the usual methods—a dog or horse—there will be two parents in the first set of ancestors, four in the second, eight in the third, and so on. In fact, the number of ancestors may be represented by the mathematical formula 2^n where "n" is the number of steps traced back. Half of this number will be male and half will be female. So that at the tenth step backwards we find that this animal would have 1024 ancestors, 512 male and 512 female. This is, of course, assuming that there has been no inbreeding.

A different state of things altogether presents itself when the pedigree of a bee is traced back. Assuming the theory that a drone has no male parent, the following will show the ancestry of a worker or queen-bee to ten generations.

It is most surprising the way the number of missing ancestors mounts up. Until I worked out this little table, I had not the least idea that it would amount to so many at the tenth generation back. For my own amusement, I have worked this out to twenty steps, and find that whereas the ordinary animal has 1,052,672 ancestors, half male and half female, the worker or queen-bee has but 17,711, of which 10,946 are female and 6765 are male, while there is the enormous number of 1,034,961 ancestors missing.

	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.
Queen	1	2	3	5	8	13	21	34	55	89
Drone	1	1	2	3	5	8	13	21	34	55
Missing	0	1	3	8	19	43	94	201	423	880
Total ancestors for ordinary animal	2	4	8	16	32	64	128	256	512	1024

The numbers in the pedigree of a drone are slightly different, there being as many ancestors in the tenth generation as in the ninth of a queen or worker, and so on.

It will be seen that the reason for this enormous difference in the number of ancestors between the bee and the ordinary animal is that the ancestry of the bee mounts up by addition, whilst that of the animal mounts up by involution of the number two.

I have my theories as to what principles in the selection of stock these facts point, but I should like to know those of your other readers, and to know whether this line of thought has ever been followed out before.—D. Wilson, Belper.

THE SEASON IN CORNWALL.

[8326] I have been much interested in reading the reports of the past year's honey harvest in the various counties. It might be interesting to others to know how we in Cornwall have fared. The summer of 1911 was one which will long be remembered, both by bee-keepers and holiday-makers. All the bee-keepers that I came into touch with were delighted with their successful honey season, which was uniformly good for those who had their stocks strong at the right time. From nine hives I took over 4cwt. of good honey, and had four swarms besides. Two of my hives gave me no less than 237lb., one 125lb., and the other 112lb., which is a record in my apiary. All stocks except two lots of driven bees have gone into winter quarters without any extra feeding; it is my practice never to take any honey from the brood-nest. Swarms have been few and far between. I am glad to say that the "Isle of Wight" disease has not yet appeared in my apiary, and I trust it never will. I have done a fair amount of exhibiting last season, and was successful in taking nine first, three second, and two third prizes, and one fourth prize. I should like to express my appreciation of the "B.B.J." as an advertising medium. In August last I had letters from all parts of the country for honey, driven bees, and queens. I believe I could have sold a ton of honey after the advertisement appeared. I also had a great many orders for driven bees and queens. I believe that if you advertise good stuff there will be no trouble in selling it at a reasonable price. Trusting that the New Year will be a good one for all.—A. F. Knight, Kenwyn, Truro.

FIGHTING FOUL-BROOD.

[8327] I wonder how long it would take to convince Mr. Woodley and other opponents of the necessity for some form of legislation, including compulsory examination, if he had a constant open source of infection within bee-distance of his apiary controlled by an ignorant, pig-headed and irascible man? Not long, I think.

I had a somewhat similar disastrous experience as "Sufferer" (8320) "B.J.," December 21st, the owner calmly informing me that the one stock he

had left, which I noticed vigorously robbing two hives close by, was "cleaning out some combs for next spring." These I found were rotten with foul-brood, the occupants apparently having died out. I subsequently, and undoubtedly attributable to this, had a bad outbreak in my apiary, lost ten or twelve stocks, and, after trying to tinker with it, came to the conclusion the first loss would be the best, and burnt about eighty combs, quilts, &c.—a rather expensive job (as I wire my frames and use full sheets of foundation) not counting the work done by the bees, and the great trouble of disinfecting hives and appliances. What is to be done in such a case? I think a good many would agree, if it would do away with opposition, that owners of say twenty hives upwards should be exempt from compulsion, as they in their own interest would see that their bees were healthy, but to do away with the compulsory clause, as Mr. Woodley advises (8310), would leave us much as we are now —completely at the mercy of ignorance and obstinacy.

Practically the only course open now is to buy up the infected hives (or replace them with healthy stocks) and burn the lot; a double tax on the enterprising beeman, besides the trouble in his own apiary (unless he has the luck to get rid of the infection in time)—surely the height of injustice. I send name for reference.—ANOTHER SUFFERER, Kent.

RANDOM JOTTINGS.

By Chas. H. Heap, Reading.

A few days ago I had an interesting talk with a Wiltshire man, who, before being lured to the town, kept bees in his native village, which in Anglo-Saxon times was a town of importance. The antiquity of the village may have some connection with his firm belief in hoary legends of the honey-bee. His family had lived in one house for over two hundred years, and though he has not passed the prime of life, his faith in death signs and charms is too strong to be shaken by ridicule. I did not laugh at him, for I was anxious to learn first-hand from a believer in old-world notions what I could of superstitions relating to bees. Talking of swarming, he said that there is no surer sign of a coming death in a family than that of a swarm settling on a "stok" (a dead stump) in a hedge. "I had," he continued, "a swarm on a 'stok' in my garden hedge, and three months afterwards my first wife was dead. Nothing will ever make me think that wasn't a sign. An old man who kept bees and sometimes hived bees for me asked me about three weeks after my wife's death whether I had told the bees. I said 'No; I hadn't thought about it.' The old man said, 'You always ought to tell the bees, or they'll die!' His words came true; they all died before the spring." My informant's knowledge of bees appeared to be of the scantiest; and the death of the swarm, if one knew all the facts, could, no doubt, be explained easily enough. The death of the man's wife and the settling of the swarm upon the "stok" were merely a coincidence. When my Wiltshire acquaintance again entered the bonds of matrimony he married into a bee-keeping family, for his mother-in-law, who lived in Hampshire, for many years kept about a hundred stocks in skeps, from which she managed to make a comfortable living. "Her honey," I was told, "went 'all over England,' and didn't she know how to charge—half-a-crown a pound."

Undesirable Bee-keepers.—I am always glad to hear that a man like the one of whom I have been writing has ceased to keep bees. There are still far too many ignorant and careless bee-keepers in existence; and though there is room for a considerable extension of bee-keeping in this country, what we want are better bee-keepers. If the industry is to flourish, it must be conducted by men of intelligence with an aptitude for the work. It is easy to read of glowing accounts of the pleasure and profits of bee-keeping; but to realise them is another matter. The interest which has been created during the last few years in small-holdings has led many to set up as bee-keepers; but bees are so different from ordinary farm stock and require knowledge of a kind which cannot be picked up promiscuously, but only by close study, that only a moderate percentage of men are able to succeed. Since I wrote my last jottings, I have heard of a small-holder who contemplated setting up as a bee-keeper. A friend of mine, who, owing to a severe accident, has unfortunately lost the nerve necessary for bee-keeping, was consulted; and on learning that the small-holder was totally unacquainted with bees, wisely advised him to leave them alone. The advice is, I am glad to say, being followed. I think that before a man or woman is advised to take up bee-keeping the experienced bee-keeper should have some knowledge of the character of the person to whom the advice is proffered. To a man unfitted for the work bees in the long run will be a loss, and his methods, or absence of methods, a nuisance, if not a menace, to every bee-keeper in his neighbourhood.

Useful Hints.—As the thoughtful and methodical bee-keeper will soon be making preparations for the coming season, I may give one or two hints that may be of

service. When scrubbing hives and appliances, a sauce-pan brush is a useful adjunct to the scrubbing brush. It goes well into corners and along ledges. Hints from many trades go to make bee work successful. In wiring frames, I have laid the craft of the shoemaker under contribution. A fine stab-awl serves admirably for piercing frames and ¼in. tingles may be used advantageously in fastening wires. The awl should be mounted in a suitable haft, preferably a somewhat small one. Place the head of the awl in the hand to the outside of the ball of the thumb, with the end of the index finger resting on the point of the awl. Place the point of the awl and finger on the wood where the hole is required, and by half closing the hand, the awl will go straight through the wood. The great thing when using a fine awl is to give a straight twist. The holes having been made, thread the wire. If the wire is cut in lengths put the first end through the bar from the inside, push a tingle into the hole alongside the wire, twist the wire two or three times round the shank of the tingle, and then drive it home. When the wire is passed through the last hole in the frame, pull it taut before driving the tingle, which should be done with a single blow, if it can be managed, as each blow of the hammer slackens the wire more or less. If the wire is not cut off the reel all the threading must, of course, be done before the first tingle is secured. Should the hole made by the awl be too big to hold the tingle, the latter may be driven into the wood by the side of the hole. This is a quick and easy method of fixing wires, and I have known wires thus fixed stand for many years. The tingles are put into the side bars from the outside, and a piece of iron should be placed under to take the force of the blow and clinch the point of the tingle, if long enough.

THE HONEY HARVEST FOR 1911.

(*Continued from p.* 513.)

SOUTH OF SCOTLAND.

This has proved a grand season in most parts of Scotland, and bee-keepers, as a rule, are in high spirits. In some places, however, the yield was below the average; in fact, some places that usually do well were failures as far as honey production is concerned. In some of the dry, sandy districts of Dumfriesshire the pasture was entirely burnt up and consequently the bees could get little. The surplus of heather was the best that Scottish bee-keepers have had for a number of years, and, prices ruling a good average, they are being repaid for the losses of recent years. —Q. AIRD.

STAFFORDSHIRE.

The honey harvest in Staffordshire has been exceptionally good both for quantity and quality. The record reported for a single hive comes from the Lichfield district, and is 140lb. from a hive of pure bred Italians. A considerable number of yields of over 100lb. are reported. There has been a total absence of honey-dew. At our honey show in September last the judges found considerable difficulty in awarding the prizes in the light honey class, owing to splendid quality of the many entries. The clover season was short, but gave a prolific yield.—C. R. FORSE.

WARWICKSHIRE.

The honey harvest in Warwickshire was above the average in quality and quantity, and with some good rain in the early part of the season, would have been the best harvest for many years past.—J. N. BOWER.

WIGTOWNSHIRE.

The honey season of 1911, though not a "record," may be classed as "very good." The almost continuous dry season did not affect this district so much as in other parts. Clover and heather have given good results, though the quality of the former is not quite up to 1910. Non-swarming stocks have yielded a surplus of from 60lb. to 80lb., viz., forty from clover, and about thirty from heather, with abundant stores for winter. Bees are in excellent condition; hatching carried on well into September. Honey prices have been well maintained. A few seasons like 1911 would benefit the industry.—WILLIAM MCNALLY.

YORKSHIRE.

From my five hives I have so far taken 858lb., and from the W.S. Italian hive 310lb. of honey. Also from two English stocks I have taken 206lb. and 192lb. respectively. This has been a fine year for bees, though if we had had a little rain in July we should have secured a good deal more honey in August. All the heather was burnt up.—JULIAN E. LOCKWOOD (Hunstanton).

Queries and Replies.

[8267] *Working Double-colony Hives.* —I shall be obliged if you will answer the following questions in the BRITISH BEE JOURNAL:—(1) In working a double-colony hive for surplus is it best to have the body-box in one divided by queen-excluder dummy; or (2) divided by a perforated zinc dummy, allowing bees only to mix in supers; or (3) to have two separate body-boxes and work on Simmins' turn-

over system? (4) Is it a fact that when bees of two colonies in one hive have free intercourse, one of the queens generally disappears during the winter? (5) Does it, in your opinion, pay to use double-hives when working for surplus honey?—R. H. B., Buxted.

REPLY.—(1 and 2) See reply to "Wax." (3) We do not recommend the double system at all, as it has frequently been tried and found wanting by experienced bee-keepers. (4) Yes, this is always a difficulty with the double-queen system. (5) No, we do not advise you to try it.

[8268] *Double-colony System.*—I am making a double-colony bee-hive. (1) The two lots of bees are divided by a queen-excluder division only, the bees also mix when up in the supers. The two queens cannot get together without coming outside and re-entering. Will this work, do you think? (2) Can I use whitewash inside my hives, both as a disinfectant and also to prevent bees sticking the moveable parts together with propolis or wax? I think wax will not stick to whitewashed wood. Can you suggest anything better? —WAX, Grimsby.

REPLY.—(1) The division-board should be made of three-ply fretwood, with holes about ⅛in. burnt through to prevent propolisation. You will have difficulty with the excluder division. (2) A fine whitewash or distemper might be used to wash inside the hive, but it is better to leave the plain wood.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Space Between Brood (p. 463).—I think that measurement will show the usual space to be more than ⅜in., as stated here. I refer, of course, to worker brood in combs spaced at 1½in. centres. I take it for granted that Mr. Herrod intends this as the usual spacing, for unless this be understood there is no reason why the space can "ever be smaller." My own spacing is 1⅜in. centres. Others have tried 1¼in. Now the space between brood cappings cannot surely be the same for all these pitches, for the thickness of the brood-comb is, as Mr. Herrod implies, a constant.

The Common Wasp (p. 469).—The penultimate paragraph reads as though one could train a wasp to sting regularly in the same place! Whilst the warning given suggests that it is best to leave her undisturbed while stinging, to finish the business thoroughly, lest a worse thing befall. I wonder now!

Sugar-feeding and Disease (p. 472).—Possibly "*commercial* standpoint" is a misprint for "communal," where Mr. Manley quotes from my note, but whether or not, I am inclined to agree with the version. "Maximum yield" is, in my opinion, the goal which all queen-breeders should have in view, but it is a goal of which, I fear, they occasionally lose sight in the pursuit of some other desire of the eye.

Tales I have Read (p. 473).—It is more than doubtful whether the Babylonians buried their victims in honey, as Mr. Smallwood suggests. Did they do so, it were probable that the embalming was temporary, and that the sweet morsel appeared later at table. This would account for failure to discover traces of the process. Such attention on the part of a captor must surely have been "disinterested." No wonder that one of their captives said, when offered life as a slave or such sweet burial, "To be candied, I would rather die."

Dry Season and Disease (p. 485).—I am glad to have been the cause of this stimulating contribution from Mr. Simmins, however mistaken I may have been in my criticism. His appreciation of hival conditions shows that he possesses perceptional gifts in exceptional measure. What might we not know, could we but live as an inmate of the hive for a period? Mr. Simmins at least gives us "furiously to think." The test of theory is its power to predict. This he seems to have been able to do with his theories. I admit, now that he challenges me, that I do not know that disease did diminish during the hot season. But I believed when writing that this was generally reported. Should Mr. Simmins' later information be generally true, I would only further express the hope that the remedy he has put forward may prove generally effective.

Candied Stores (p. 486).—There are differences between candy and candied honey, which Mr. Simmins appears to have ignored. Candy is exposed, and is susceptible to moist warmth, so that the bees are able to resolve it without recourse to water-carrying. At least, I think so. Candied honey, on the other hand, may be sealed, and when arrived at by the bees conditions may be unfavourable, whilst the addition of water is almost certainly necessary. Again, the granules in honey are often so hard that the bees simply reject them, and their stores are rapidly depleted. A consequent danger is, therefore, that the bee-keeper, unconscious of their true condition, may suppose his bees to be sufficiently provided. This rejection of the granules suggests that there may be essential differences. For these granules consist largely of levulose, which granulates more readily than the dextrose, the honey thus under-

going a process of separation. It is possible that dextrose is an incomplete or unsuitable food, apart from the shortage of supply. I would rather attempt to winter bees on candy than upon honey candied *in the comb*. I could at least ensure that the candy was of suitable quality.

Drone v. Worker Comb (p. 507).—Mr. Harris appears to have misunderstood my note. My reference to "sectional" hives would perhaps have been clearer had I said shallow-frame hives. "Surplus roofs" supposed him to have his ordinary hives already stocked, and to be forced by this to utilise shallow-frame supers for the driven bees. Evidently a supposition wide of the mark. I doubt whether built-up combs can be so free from transition cells as Mr. Harris thinks. I have made them up with care, but the bees usually worked over the junctures a good deal. My reference to honey-dew and pollen was due to Mr. Harris' use of the word "opaque" Such combs as he describes would, of course, be eminently suitable for extraction, not having been utilised for brood. My sections were spoiled by pollen, not by brood. In several cases the trouble was caused by the attempt to confine bees too closely to shallow-frames.

Flight in December (p. 507).—On Saturday, December 30th, my bees flew freely, and even visited the house, peering in through the sunny window of the room in which I was seated, no doubt to wish me a Happy New Year.

In turn I would wish to all those correspondents who have kindly provided subjects for this column, to all those readers who are kindly interested, and to all other kindly souls wherever they may be, or may have bees, a Happy New Year.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. J. Liverton (Devon).—*Fertilisation of Eggs.*—Your theory has been advanced and exploded years ago. The egg is fertilised at will by the queen when in her prime. Drones are sometimes reared in worker cells at times when the queen begins to get old and her power of fertilisation depreciates. The opposite has been tried without success. Many thanks for your good wishes.

A. J. J. (Croydon).—*Dead Bees.*—The bees were too decomposed for us to diagnose cause of death

Countryman (Blairgowrie).—*Isle of Wight and Disease.*—We fear that the disease still holds its own in the island, and many of the bee-keepers there are afraid to make a fresh start until more light has been thrown upon the origin and possible cure of the malady. Some, however, have re-stocked their hives, and these appear to be healthy at present, but the epidemic has not been stamped out yet, either there or on the mainland.

Honey Samples.

W. J. (Melbourne).—A beautiful light-coloured honey from clover with a very slight admixture from other sources. If properly strained, might be called a first-class honey: the particles of wax spoil its otherwise attractive appearance.

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WANTED 1st, 2nd, 3rd, 4th, 5th, 12th, 13th, and 16th Editions of "British Bee-Keepers' Guide Book."—Particulars and prices to "British Bee Journal," 23, Bedford-street, Strand, London, W.C.

Editorial, Notices, &c.

THE WEATHER OF 1911.

The weather is always an important topic with bee-keepers, and it is no wonder that so many begin their articles by alluding to it, considering the real import it is to them. If we have the right sort of weather bees eagerly respond to it, and the bee-keeper derives the benefit in the shape of well-filled supers; while if it is adverse, idleness is enforced, with the resulting failure of the harvest. The year just closed is a fair example of this truism, and has established a claim to be a memorable one if only owing to the remarkable summer and prolonged drought, in some instances new records having been created.

The summer of 1911 was the warmest recorded since 1858, when the meteorological station of the British Rainfall Organisation was established. The thermometer went up to 100deg. at Greenwich on the hottest day, a temperature which in a climate like ours is exceedingly oppressive. There were forty-two days in a period of ninety-two consecutive days when the thermometer recorded a shade temperature of over 80deg. The nearest approach to this was in 1868, when there were only thirty-two days, or twelve fewer than 1911, with a similar temperature. There were also ten days when the temperature was over 90deg. Five of these were in July, four in August, and one in September. Of the days when the temperature was above 80deg. and below 90deg. there were twenty in July, fourteen in August, and eight in September. During the hot spell the night temperature was also remarkable, as frequently the minimum temperature ranged between 60deg. and 70deg. July had the highest mean temperature in the fifty-four years. August had a higher mean temperature than any previous August during the same period, and although September was not quite so warm, the three months taken together show the highest mean temperature recorded.

No less remarkable was the year in respect of sunshine, as we find July was the sunniest month, with 320 hours of sunshine, the average for the month being 181, showing a difference of 139 hours. The sunshine was above the average in every month except March and October, the total hours of actual sunshine in the year being 1593.2, the average being 1144.3. The total increase above the average was therefore 448.9 hours.

Until the middle of October the rainfall was only half the normal quantity from the beginning of the year. Then the weather changed and the drought of 1911, which had held with few brief exceptions for four months, came to an end. By a strange coincidence no rain fell from the 4th to the 10th in the four consecutive months of May to August. In July there were twenty-four consecutive days without rain. During December the rainfall was 3.94in., the average being 1.96. In November the fall was 3.02 or .67in. above the average. The rainfall for the nine months from January to September was below the average. The total rainfall for the year was 22.38in., the average being 24.37in. showing that there was a deficiency of 1.99in. for the year. Rain fell on 155 days during the year, December being the wettest month since 1886, having twenty-three rain days. In July there were only five rain days. November and December, although wet months, were particularly free from fog.

On the whole the year has been a very favourable one for bee-keepers. In April and May there was more sunshine than usual, there being fifty-seven hours above the average. This with the favourable night temperatures was conducive to the secretion of nectar, and resulted in full supers being removed early in June. The Coronation year, 1911, will long be remembered by bee-keepers, not only for the abundance of honey, but also for its uniformly good quality.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of December, 1911, was £1,518.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

TOTAL HONEY IMPORTS FOR 1911.	
January	£779
February	403
March	1,572
April	4,441
May	4,542
June	6,897
July	2,229
August	7,371
September	4,189
October	3,064
November	5,326
December	1,518
Total	£42,331

This shows a decrease of £3,513; in 1910 the imports of honey amounted to £45,844.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

PROCURING SURPLUS.

(*Continued from p. 495, vol. 39.*)

We will now suppose that the top super is complete, and the honey all sealed over. As we have customers waiting for supplies it is imperative that we should obtain

FIG. 1.

some for them as quickly as possible to retain their custom and prevent them taking up the sale of foreign produce.

Before commencing operations have everything ready, *i.e.*, four blocks of wood about ½in. thick, 2in. long, by 1in. broad; a good strong screwdriver, and the "Porter" Bee Escape board. See that the escape fits properly into the hole in the board, and that the springs are not blocked with dead bees or rendered unworkable by being propolized. Get the smoker going properly and put on a veil. Mid-day is the best time to carry out the operation for reasons previously given. Before touching the hive send in two or three puffs of smoke at the entrance, a wait of about a minute to give the bees time to gorge themselves with honey is advantageous. Next remove the roof and rear it by the side of the hive as seen at Fig. 1; don't put it on the ground just at the back of the hive as it will form an obstacle to fall over during the operation; if this is done the accident will happen at the most inconvenient time, just when on a balance with the full super in the hands. The lifts are now taken off and placed on the ground on the other side of the hive, stacking them cornerwise as also seen at Fig. 1. Lay the blocks of wood handy on the top of the quilts, then with the left hand use the screwdriver as a lever, puffing in a little smoke to drive the bees down, insert one of the blocks of wood at each back corner as seen in Fig. 2, then treat the two front corners in the same manner, so that we have the super as in Fig. 3. One or two frames may stick to the bottom bars; these should be prised down with the screwdriver. Allow it to stand for a little while for the bees to clean up the honey, a little of which will have leaked by the breaking of brace combs. To prevent robbing, the lifts and roof should be put back while this is going on.

When this has been done, put the "Porter" Escape board on the top of lifts as seen in Fig. 3; lift the super on to this, see Fig. 4. Drive down the bees in the next set of combs by means of the smoker, then lift super and "Porter" Escape board intact into its original position on the hive, when in the course of a few hours every bee will have descended through the escape springs. I would call particular attention to the manner of working with the lifts cornerwise on the ground, and

FIG. 2.

the supers on top. The cross position gives stability, and by placing the supers in this way instead of on the ground we avoid all possible chance of dirt, earth or stones adhering to the bottom bars of the frames.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEE DISEASES LEGISLATION.

[8328] I did not intend to trespass any further on your valuable space with reference to this vexed question, but Mr. Woodley's "Notes by the Way," on page 486 ("B.J.," Dec. 7th), compel me to claim again your kind indulgence for a few remarks. Mr. Woodley's claim for exemption from compulsory inspection on behalf of large apiarists would not be workable in an Act of Parliament. If inspection is compulsory for one bee-keeper it must be so for all. If the man with forty hives is to be exempt, it would be hard on the man with thirty-nine to have to submit. I do not think that Mr. Woodley or other owners of large apiaries have anything to dread from inconvenient visits from the inspector, for surely the Act will not be worked in a vexatious spirit, and therefore the inspector, knowing that the large owner was capable of discovering and dealing with disease, would not think of examining all his hives. All that would be necessary would be to look at one here and there, the whole proceeding being over in half-an-hour. The big man is usually able to look after himself in whatever walk of life he is in; it is the man in a small way who requires assistance, and unless we are able to have some control over disease, it is impossible to assist him effectually. The County Associations send their experts round to advise and assist bee-keepers, and these are the kind of reports they return: "——'s bees have disease badly; he refuses to destroy," and again: "—— has six hives, all badly diseased; must have got it from ——, who lives near him"; and so it goes on until the whole neighbourhood is devastated with disease, and eventually there is not a bee left. If owners of large apiaries who object to legislation had rotten, old, foul-broody skeps placed near their apiaries, they would very soon change their views and cry out for power to deal with the abomination. Wishing continued success to your two publications—the JOURNAL and the *Record*—which are of such inestimable benefit to bee-keepers.—E. W. FRANKLIN, Hon. Sec., Cheshire Bee-keepers' Association.

FIG. 3.

FIG. 4.

HELPFUL HINTS FOR NOVICES.

PARTHENOGENESIS.

[8329] The contribution last week by Mr. D. Wilson, on "Parthenogenesis" (page 5) is intensely interesting, and for my own edification I checked his figures. While agreeing with the bee figures, which advance by a simple numerical progression, mine do not agree with the simpler progression of his ordinary animal's ancestors; if worked back to the twentieth generation, these give only 1,048,576, thus making a loss for the bees of 1,030,865, and not, as he gives it, 1,034,961. No doubt he will see at a glance that this must be so, for the unit progression of X2 is 2:4:8:6: in fours, and the fifth four will therefore land him on a six for unit.

Trusting he will pardon the indication of this little error, and that he and others will state what theories they have formed from the facts; I am too much a tyro in the craft to have formed any myself.—A. B. H., Leytonstone.

POLLEN IN SECTIONS.

[8330] This seems to me a case of mismanagement (page 10). I do not remember seeing more than one cell of pollen in twenty dozen sections last season. Does Mr. Crawshaw put section supers on, as first supers? If so, that might account for it. To make sure I prefer brood boxes that will take at least twelve standard frames, and always put on as a first super an eight frame rack of shallow worker combs or worker foundation; and at the same time, I insert one or two brood frames with full sheets of worker foundation in centre. Then whilst bees are drawing out the lower sheets and the queen depositing eggs in them, other bees are drawing out the shallow frames or (if drawn-out combs are provided) filling them with honey. As soon as the combs in supers are being sealed over a section super (or rack) is put on under the shallow frames, and in case the latter have brood in them, I believe the queen goes below at once, where as at that season young bees are emerging every minute she finds empty cells to deposit eggs. An important essential is to make sure there are no pollen clogged combs in the brood-frames. I may say that the standard frames referred to, as being 7lb. to 9lb. weight each, were from the outsides of twelve frame brood boxes, and had been cleaned out of pollen the previous season. There seems to be a little misunderstanding about extracting from "brood frames." Of course, I do not extract from frames with brood in them, and if I extract from frames with pollen in them the honey is always kept separate, the combs being placed in hives with inside entrances (detention chambers) for the bees to clean. Then the pollen is cleaned out, and the empty combs are then worth 1s. each at least, for I notice dealers ask 1s. 6d. each for them. Some of my shallow frame combs have been in use for twelve or fourteen separate seasons, and the honey is quite as pale and clear as from newly-drawn combs. Besides they do not break when extracting, like new combs.

Controlling Swarming.—With twelve or more frames parallel with entrance, one feels complete master of bees; to me a ten frame hive is an aggravation, I often wonder how anyone tolerates them.—A. Harris, Wavendon, N. Bucks.

DECEMBER POLLEN GATHERING.

[8331] I have read with interest Mr. H. P. Perkins's letter in your issue of the 21st ult., as on the same day and between the hours he mentions I observed bees carrying pollen into one of my hives. With the words "in considerable quantities" deleted, Mr. Perkins's experience coincides exactly with my own.

I should like to ask your opinion, Mr. Editor, as to the probability of the "bright yellow pollen" having been obtained from gorse blooms! Although the latter are not numerous during the winter months, they are, of course, in evidence throughout the year.—R. E. W., Berkhamsted.

THE PAST SEASON IN EAST WILTS.

[8332] The season of 1911 may be written down as a very good one, despite the drawbacks of a late spring and prolonged droughts. Bees were very backward, as the weather at the beginning of April last was as cold as any experienced during the winter, with the result that when the dandelions were in bloom and the weather everything that could be desired they were only able to fill up the body boxes.

There was practically no rain from the first week in May to just before the Coronation, and swarming was not general until the beginning of June. I started the season with six stocks, and had six swarms and three casts, despite (in some instances) swarms being hived on the old stands. However, I soon got them back into seven lots.

There appeared to be very little nectar secreted in the first crop of white clover, and bees hardly worked at all although the weather was very hot. Then came a stormy ten days at Coronation time, with a very low temperature, but on July 6th the heat-wave returned, and for the next fortnight honey came in at a great rate. Although we had hardly a wet day until October, a certain amount of honey was gathered well into August.

Notwithstanding the excessive swarming, I took 3cwt. of beautiful extracted honey (a swarm that came off on Whit Sunday gave me over 50lb. of surplus, and from two that on June 9th came out simultaneously and joined I had well over 70lb.), and six stocks out of seven had sufficient stores to winter on.

I tried D. M. M.'s plan of putting the empty super on top, and it appeared to answer just as well as the reverse way, and with this great advantage, that if a few cold days come soon after the empty super has been put on one does not find both deserted about the next day.

I noticed this year that the lime blossom was almost entirely neglected by the bees. Instead of the usual busy hum for days together, there was hardly a bee on the trees. I enclose a photograph of my little apiary, but am afraid the hives are rather hidden by green stuff, which

A PICTURESQUE APIARY IN WILTSHIRE.

thrived in spite of the drought. Will you kindly tell me in your next number how high body boxes should be wedged up in hot weather? I notice on page 486 that Mr. Woodley is very much opposed to the doing away with skeps. Surely the sulphur-impregnated honey mixed with pollen and brood produced in them cannot help the industry much.

Again, with respect to the owner of twenty or more hives not allowing any foul-broody colonies to be amongst them, do out-apiaries of this size always get well looked after? Some I have seen don't appear to have had much attention.

There are certain people who will *never* take steps to keep their bees in a proper way unless they are made to by law, and why should others, who are really keen, suffer because of these slacksters?—A. STRATTON, The Old Manor, West Overton.

BEE-KEEPERS AND LEGISLATION.

[8333] I should like to say that Mr. Crawshaw (page 9) is quite right in supposing that the words he refers to in "Cappings," "B.B.J.," Jan. 4th, were a misprint.

With regard to all the talk about foulbrood legislation, there seems to me to be two distinct "sides," if I may use that term—one faction proposes drastic measures, viz., compulsory inspection of all apiaries; the other, headed by Mr. Wm. Woodley, seems to think that the compulsory clause ought to be struck out of the Bill, or, at least, the more extensive apiarists should be exempt on the ground that the owner of a large or medium-sized apiary could be safely trusted in the matter of disease. Now, it seems to me that the first proposal would be almost unworkable and altogether undesirable, because of the extreme annoyance it must necessarily cause to large bee-keepers to be liable at any time to compulsory inspection: for instance, take the case of Mr. Stevenson, an Irish bee-keeper, an account of whose business was given in the "B.B.J." two or three weeks ago. As to the other scheme, any law of the kind would be useless if compulsory inspection were struck out of it altogether, seeing that the most dangerous type of bee-keeper would not be affected by compulsory notification, as in many cases he would not know when his bees were diseased. I may add that it is quite possible, although improbable, that this type of man may keep a large number of stocks.

Now, with regard to exempting large apiaries. In the first place the size of the apiary is no *real* guarantee of the owner being qualified to deal with disease;

and in the second place a clause of this nature is nothing less than pure and simple favouritism, and as such I doubt if it could be got through Parliament; and thirdly, there is the difficulty of fixing the minimum number of hives necessary for exemption.

Could not a clause be introduced to exempt from the compulsory inspection all bee-keepers who can show that they possess sufficient knowledge of bees and the management of bee diseases to be perfectly capable of doing all that is required themselves, without the help of an expert or inspector? This could be easily managed by making inspection compulsory for all those who do not hold a certificate from the B.B.K.A., or a special examination might be instituted for the purpose, if thought desirable. It is clear that all who are fit to be trusted without inspection could easily pass this test, and equally clear that all who cannot are unfit to be so trusted. Of course, notification, under a heavy penalty, could be insisted upon if thought desirable, which, in my opinion, it is. Perhaps some of your other correspondents might give their opinion upon it.

I may say that the abolition of skeps, &c., as proposed by Mr. Tickner Edwardes, seems to me wholly undesirable, at any rate for some time to come.—R. B. Manley, Towcester.

POLLEN GATHERING IN JANUARY.

[8334] Perhaps it will interest you to know that on Tuesday the 2nd inst., when I visited my apiary I found nearly all my colonies of bees having a New Year's gambol. Several of them were visiting the whin bloom, a large quantity of which adjoins my apiary. I noticed two of them with their pollen baskets about half-full, which showed that they were not working in vain. I did not see them on New Year's Day, but as the weather was equally fine and bright (temperature 50deg. to 54deg. Fahr.), I have no doubt some of them commenced work with the new year. Last year I noticed them at work in the same way on the 16th of January.—Wm. G. Adam, Elgin, N.B.

DEALING WITH "ISLE OF WIGHT" DISEASE.

[8335] I send an account of how I cured a mild case of "Isle of Wight" disease last spring. At the beginning of August, 1910, I had an accident with my bees. I was loading them on one side of a wagon in a narrow lane, when the wagon tilted, throwing off six hives, five being smashed in getting the horse away without being stung; as the night was dark and the bees fierce, especially the cross-breds, I left the wreck alone until daybreak. Among the debris I found four queens, so I made four stocks, and as they had a fair amount of stores and brood I left them alone for about a month, then opening them to see if there was any chilled or diseased brood; all seemed to have hatched out, and there was not a single diseased cell. I then commenced feeding with pure cane sugar syrup slightly medicated with Napthol Beta, afterwards giving candy (boiling it a little harder and adding a little honey while hot, which I think keeps it softer afterwards). In April last I was one day surprised and dismayed at seeing a quantity of bees crawling about the entrance, many dying in a few minutes; it was not chilly, and the sun was shining brightly. I picked up a few of the liveliest, and put them in a warm place, but it had no effect; all my twelve stocks seemed more or less affected. I immediately got three empty hives, some boiling water and carbolic acid and soap, using one part of acid to six or eight of water, and started spring cleaning with a will. I was surprised on opening the hives to see how beautiful and clean the combs were; many were fully two-thirds full or more of sealed stores, so I took three or four of the heaviest combs out of each, closing the space with a dummy, and crowding the bees. My reason for doing this was to experiment. (In spring when foraging young bees have a habit of going into the first hive they come across if it has many bees flying in and out, and if they are welcome will stay there). I wanted mine to stay at home. I put several of the combs behind some garden lights which I reared up against the south wall of the house, after filling most of the empty cells with a strong solution of salt and water; this I continued to do as fast or faster than they were emptied. This gave the bees exercise and caused ventilation in the hives by the bees passing in and out. The combs were hung plumb as in the hive, the heat of the sun warmed the water, and the water dissolved any candied food. Instead of increasing, the disease soon decreased, but not before it had ruined four stocks. The remainder have done well; one hive gave over 90lb. of surplus beside leaving ample natural stores. May I ask one question?—is the disease rampant where salt is produced in large quantities, or where used to any extent on the land? There does not seem to be so much used nowadays as in former times. Wasps are condemned as carriers of the disease. Are not birds, especially those that eat diseased bees, far more likely to carry it, especially at times when wasps are hibernating? Personally, I think some of us have not started at home

to find the cause of the spread of the disease. Amongst the diseased bees I picked up I noticed two distinct symptoms, though the abdomen in both cases was considerably swollen. The contents of the one was similar to bees that have been confined to the hives during a period of bad weather. The contents of the abdomen of the other cases was dark coloured, and gave off a most unpleasant smell. I have little doubt but that if a slightly diseased bee of this kind got into a hive it would contaminate others, and these in turn would contaminate the whole hive, not with or by the food, but through the respirating system. The germs would probably be conveyed to similar organs of other bees by the same system, thus extending the disease. Very young bees and brood do not seem to be affected, probably because the organs are not so fully developed, or because if a foul air disease it takes a certain period to develop.—A Regular Reader, Birstwith.

THE BEE-MILK MYSTERY.

Among the innumerable scraps of more or less erroneous information on hive-life, dished up by the popular newspapers in course of the year's round, there is occasionally one which is sure to grip the curious reader's attention. No one expects nowadays to read of the honey-bee without being set agape at the marvellous; but, really, when he is gravely told that the nurse-bees in a hive actually give the breast to their young, suckling them with a secreted liquid which is nothing more or less than milk, the ordinarily faithful newspaper student is entitled to be for once incredulous.

The thing, however, in spite of its grotesque improbability, comes nearer to the plain truth than many another item of bee-life more often encountered and unquestionably accepted. There are veritable nurse-bees in a hive, and these do produce something not unlike milk. In about three days after the egg has been deposited in the comb-cell by the queen, or mother-bee, a tiny white grub emerges. The feeding of this grub is immediately commenced by the bees in charge of the nursery quarters of the hive, and there is administered to it a glistening white substance closely resembling thick cream.

Analysts tell us that this bee-milk, as it is called, is highly nitrogenous in character, and that it has a decidedly acid reaction. It is obviously produced from the mouths of the nurse-bees, and appears to be digested matter thrown up from some part of the bee's internal system, and combined with the secretions from one or more of the four separate sets of glands which open into different parts of the worker-bee's mouth. The power to secrete this bee-milk seems to be normally limited to those workers who are under fourteen or fifteen days' old. After that time the bee runs dry, her nursing work is relinquished, and she goes out to forage for nectar and pollen, never, as far as is known, resuming the task of feeding the young grubs. But if the faculty is not exercised, it may be held in abeyance for months together. This takes place at the close of each year, when we know that the last bees born to the hive in autumn are those who supply the milk for the first batches of larvæ raised in the ensuing spring.

It is difficult to keep out the wonder-weaving mood when writing of any phase of hive-life, and especially so when we have this bee-milk under consideration. For all recent studies of the matter tend to prove several facts about it not merely wonderful, but verging on the mysterious.

In the first place, its composition seems to be variable at the will of the bees. The white liquid is supplied to the grubs of worker, queen, and drone, and not only is its nature different with each, but it is even possible that this may be farther modified in the various stages of their development. It is well ascertained that the physical and temperamental differences between queen and worker-bee, widely marked as they appear, are entirely due to treatment and feeding during the larval stage. That the eggs producing the two are identical is proved by the fact that these can be transposed without confounding the original purpose of the hive. The queen-egg placed in the worker-cell develops into a common worker, while the worker-egg, when exalted to a queen's cradle, infallibly produces a fully accoutred queen bee. The experiment can also be made even with the young grubs, provided that these are no more than three days old, and the same result ensues.

A close study of the food administered to bees when in the larval stage of their career is specially interesting, because it gives us the key to many otherwise inexplicable matters connected with hive-life. We do not know, and probably never shall know, how mere variation in diet causes certain organs to appear and certain other bodily parts to absent themselves. If the difference between queen and worker-bee were simply one of development, the worker being only an undersized, semi-atrophied specimen of a queen, there would be little mystery about it. But each has several highly specialised organs, of which the other has no trace, just as each has certain functions reduced to mere rudimentary uselessness, which, in the other, possess enormous development and a corresponding importance.

Clearly the food given in each case has peculiar properties, bringing about certain definite invariable results. We are able, therefore, to say positively that most of the classic marvels of bee-life are built up on this one determined issue, this one logical adjustment of cause and effect. The hive creates thousands of sexless workers and only one fertile mother-bee. It limits the number of its offspring according to the visible food supplies or the needs of the commonwealth. It brings into existence, when necessity calls for them, hundreds of male bees or drones, and when their period of usefulness is over it decrees their extermination. When the queen's fecundity declines, it raises another queen to take her place. It can even, under certain rare conditions of adversity, manufacture what is known as a fertile worker, when some mischance has deprived it of its mother-bee and the materials for providing a legitimate successor to her are not forthcoming. And all these results are primarily brought about by the one means, the one vehicle of mystery—this wonderful bee-milk playing its parts at all stages in the honey-bee's life from her cradle to her grave.

For to track down this subtly-compounded elixir through all its various uses one must take a survey of almost the whole round of activities in the hive. The food of the young larvæ, whether of queen or worker, for the first three days after the eggs are hatched, seems to consist entirely of bee-milk. The drone-grub gets an extra day of this richly nitrogenous diet. And for the remaining two days of the grub stage of the bee's life milk is given continuously, but, in the case of the worker and drone, in greatly diminished supply. Its place during these two days is largely taken, it is said, by honey and digested pollen in the worker's instance, and by honey and raw pollen for the males.

The queen-grub alone receives bee-milk, of a specially rich kind and in unlimited quantity, for the whole of her larval life. This "royal jelly," as the old bee-masters termed it, is literally poured into the capacious queen-cell. For the whole five days of her existence as a larva she actually bathes in it up to the eyes. But, as far as is known, she receives no other food during this time. The regular order of her development, and of that of the worker-bee, during the five days of the grub stage has been carefully studied, and it is curious to note that the very time when the queen's special organs of motherhood begin to show themselves coincides exactly with the moment at which the worker-grub's allowance of bee-milk is cut down and other food substituted.

This, no doubt, explains why these organs in the adult worker-bee are so elementary as to be practically non-existent, and accounts for the queen's generous growth in other directions. But it leaves us completely in the dark as to the reason for the worker's subsequent elaboration of such organs as the pollen-carrying device, the so-called wax-pincers, and the wax-secreting glands, of which the queen possesses none. Nor are we able to see how the giving or withholding of the bee-milk should furnish the queen with a long curved sting, and the worker with a short straight one; nor how mere manipulation of diet can result in making the two so dissimilar in temperament and mental attributes—the worker laborious, sociable, almost preternaturally alert of mind, and withal essentially a creature of the open air and sunshine; the queen dull of intelligence, possessed of a jealous hatred of her peers, for whom all the light and colour and fragrance of a summer's morning have no allurements, a being whose every instinct keeps her, from year's end to year's end, pent in the crowded tropic gloom of the hive.

But the bee-milk as well as being the main ingredient in the larval food, has other and almost equally important uses. It is supplied by the workers to the adult queen and drones throughout nearly the whole of their lives, and forms an indispensable part of their daily diet. And this gives us a clue in our attempt to understand, not only how the population of the hive is regulated, but why the males are so easily disposed of when the annual drone-massacre sets in. By giving or depriving her of the bee-milk, the workers can either stimulate the queen to an enormous daily output of eggs or reduce her fertility to a bare minimum; and, as for the drones, it is starvation that is the secret of their half-hearted, feeble resistance to fate.

Yet though we may recount these things, and speak of this mysterious essence called bee-milk as really the mainspring of all effort and achievement within the hive, it is doubtful whether we have solved the greatest mystery of all about it. Of what is it composed, and whence is it derived? The generally-accepted explanation of its origin is that it is pollen-chyle regurgitated from the second stomach of the bee, combined with the secretions from certain glands of the mouth in passing. But the most careful dissections have never revealed anything like bee-milk in any part of the bee's internal system. Its pure white, opaque quality has absolutely no counterpart there: nor, indeed—if we are to believe latest investigations—does pollen-chyle exist at all in either the first or second

stomach of the bee, whence alone it could be regurgitated. Bee-milk, it would seem, is still a physiological mystery, and so may remain to the end of time.—TICKNER EDWARDES, in *Pall Mall Gazette*.

CONSTRUCTIVE ADVERTISING.

An American writer in a recent number of *Gleanings* gives a few hints on selling honey which may be helpful to honey-producers in this country. He especially advocates judicious advertising, and goes on to say:—"What is successful advertising? It matters not what industry, isn't it the confidence of the public that must be secured before the desired results can be attained? Think of the thousands of great industrial plants that now cover acres of ground, that, years ago, started in two-story buildings! Have they made this enormous growth without judicious advertising and careful management of the sales end of their business? Are they not continually looking after customers, and especially after prospective consumers of their product? Imagine the great field of prospective honey-consumers. What would be the result if every producer of honey in the United States would individually this year advertise in the local and county newspapers and would start a campaign of education to prove to the masses that there is more nourishment in a pound of honey than there is in a pound of meat, and that, if they are looking after cheaper living, they must certainly include honey—one of the most essential on the list?

"Any bee-keeper who can spend a week or two peddling honey can make expenses, and can, at the same time, meet a few hundred people to whom he can talk in a way that will result in good customers in the future. Stop at every house. Make a sale every time if possible; and, if they refuse to buy, leave a generous sample, so that the whole family will get a taste of it. Mention the extra quality of your honey, and tell them that they can always depend on getting it from you. Speak of how thin it is when the bees first take it into the hive, but that you never extract it until it is perfectly ripe. Explain how it candies in cold and how to liquefy it. Can't you see the good work that can be done along this line? Fifty pounds of honey given away in samples will create confidence and customers, and result in the cheapest and best kind of advertising. Much can be accomplished by educating customers to buy extracted honey by the gallon, as they regard it as a luxury when purchasing it in quart bottles, one or two at a time.

"For fifteen years my product has been 3000 to 4000 pounds of honey a season. During this time it has been called for, and I have simply filled my orders, selling much of it in gallon cans. For two seasons a large part was sold in Akin honey-bags, in 2½ and five pound packages. My customers took it readily. It was not only satisfactory, but surprising to many to see honey in paper bags without showing a drop of liquid, and solid as a rock; this proved the nature of perfectly ripened honey. But I went back to gallon cans. Why? because some customers were inclined to take only 5 pounds while they would have bought 10 or 12 pounds if put up in gallon cans. You can see what I think of small packages.

"Past experience, and knowledge of the amount of inferior extracted honey that has been before the people, have driven me to extremes—so much so that I have never bought a pound of honey to supply my customers in case of a season's failure. Certainly there are plenty of honey-producers just as particular along this line as I am."

Queries and Replies.

[8269] *Food Supply in Winter.*—In August of last year I purchased two lots of driven bees, which I united and put in a frame hive on nine frames, giving about 15lb. to 18lb. of sugar syrup, a frame of sealed honey from another stock, and before finally packing down a 1lb. cake of soft candy. On examination a week or so ago, I found all the candy gone. Would there be any danger in removing the empty box and replacing it with another cake, or should I leave them alone till spring, and risk the consequences? A reply through "B.B.J." would oblige. Thanking you in anticipation.—F. R., Leek.

REPLY.—If the cake of candy is exhausted, you must remove the empty box and replace it with a full one. A warm day should be chosen, and as often as it is consumed replenish the supply in this way.

[8270] *Candied Honey.*—I notice in "B.B.J." for Jan. 4th (page 9) a paragraph *re* candied stores which reads as follows: "For these granules consist largely of levulose, which granulates more readily than the dextrose." Should not this be reversed? In the A.B.C. of Bee Culture the author says: "Honey candies because of the ability of dextrose to assume a crystalline form much more readily than levulose." Which statement is correct?—A. H. T., Birmingham.

REPLY.—Mr. Crawshaw has made a slip in the "Capping" referred to above. It should read "these granules consist largely of *dextrose*, which granulates more readily than the levulose." On page 10, line two, it should be *levulose* not dextrose.

WEATHER REPORTS.

BARNWOOD, GLOUCESTER.
December, 1911.

Rainfall, 6·54 in. in 26 days.
Above average, 4·59in.
Heaviest fall, 1·17 in., on 6th.
Total for year, 22·55 in. in 157 days; below average 3.45in.
Mean maximum temperature, 49·6; 4·6 above average.
Warmest day, 55, 17th; in the year, August 9th, 93·2.
Mean minimum temperature, 39·5; 2·5 above average.
Coldest night, 29, 7th; in the year, Feb. 1st, 15.1.
Mean temperature 44·5, 3·5 above average.
Relative humidity or percentage of moisture in the air at 9 a.m., 90.
Number of days with sky completely overcast at 9 a.m. 13; ditto cloudless, 3.
Percentage of cloud, 68.
Wind, prevailing direction S.W.
Percentage of wind force, 59.
Barometer: highest, 30·48 on 31st; in the year, Jan 18th, 30·79. Lowest 28·82, 10th; in the year, Nov. 18th, 28·80
Sunshine, total duration in year, 1903 hours; above average, 400.
Sunniest month July, 337 hours; dullest January, 58 hours.

F. H. Fowler (F. R. Met. Soc.).

WESTBOURNE, SUSSEX.
December, 1911.

Rainfall, 8·40 in.
Above average 5·43 in.
Heaviest fall, ·94 on 6th and 20th.
Rain fell on 27 days.
Sunshine, 41·8 hrs.
Below aver., 13·3 hrs.,
Brightest day, 9th. 5 hours.
Sunless days, 13.
Maximum temperature, 53° on 19th
Minimum temperature, 26° on 6th and 8th.
Minimum on grass, 25° on 6th.
Frosty nights, 6.
Mean maximum, 48·9.
Mean minimum, 38·0
Mean temperature, 43·4.
Above average, 4·0.
Maximum barometer, 30·358 on 31st.
Minimum barometer, 28·941 on 21st.

L. B. Birkett.

WESTBOURNE, SUSSEX.
For the Year 1911.

Rainfall, 34·33 in.
Above average 4·54 in.
Heaviest fall, 1·76 on Oct. 24th.
Rain fell on 164 days (below average 12)
Sunshine, 2055 hrs.
Above average, 237·1 hours.
Brightest day, June 8th. 15·3 hrs.
Sunless days, 58 (below average 2)
Maximum temperature, 92·6 on Aug. 15th.
Minimum temperature, 23° on Jan. 15th and 16th.
Minimum on grass, 20° on Jan. 16th.
Frosty nights, 61° (below average 10).
Mean temperature, 50·2.
Above average, 1·9
Maximum barometer, 30·770 on Jan. 18th.
Minimum barometer, 28·837 on Nov. 18th.

L. B. Birkett.

Notices to Correspondents

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

ANXIOUS (Edgbaston).—*Managing a Unicomb Observatory Hive.* (1) Yes, you must have the queen on the comb in observatory. (2) The bees should not be kept longer in it than two or three days at most without a flight. (3) Yes, treat them just as you would in uniting. (4) There should be enough bees to cover the comb and protect the brood, and a perfectly even comb should be selected. Protect well at night. (5) This is an oversight and should be dextrose.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 5s. *per* ¼ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

LIMNANTHES DOUGLASII, strong plants, 30 6d., 60 9d.; seeds, 3d. packet, two 5d.; also Chapman's Honey Plant, seeds 4d, two 6d., free. REV. ANDERSON, Northam, North Devon. r 71

I WANT a dozen or so healthy old Combs, black with age, and pollen clogged, the older the better; would some brother bee-keeper oblige.—Reply to ARTHUR H. WILKES, Lichfield-road, Four Oaks.

7 DOZEN good Sections, in enamelled metal cases, 8s. per dozen.—ADAMS, Dunton, Biggleswade. r 79

HEATHER HONEY, in 7lb. and 14lb. tins, offering very cheap; sample, 4d.—F. A. BEAN, Snaith, Yorkshire. r 80

LIMNANTHES, splendid for bees, plants 100 1s. —BOWEN, expert, Coronation-road, Cheltenham. r 81

FOUR healthy strong Stocks, in Howard's B1 Hives, packed on rail; several dozens good quality Sections, 7s. 6d. dozen, packed.—C. DRAKE, Sutton, Cambs. r 82

200 WELL-FILLED LIGHT SECTIONS, 8s. 6d. dozen, carriage paid.—GEORGE SAUNDERS, 22 Oakley Lodge, Eye, Suffolk. r 83

RAMBLER ROSES.—Dorothy Perkins, strong trees, 6ft. to 7ft., 6d. each, 5s. 6d. dozen, f.o.r. —F. LONGLY, High-street, Hythe, Kent. r 84

NEW lever lid Honey Tins, 4lb., several dozens to spare, 3s. 6d. dozen.—JUDGE, Hawley, Dartford. r 85

Editorial, Notices, &c.

REVIEWS.

We have received from M. Ch. Janet the following papers referring to bees, which he has contributed to the *Comptes Renders des Séances de l'Académie des Sciences*, Paris:

Sur les Museles des Fourmis, des Guêpes et des Abeilles.—In these, each group of divergent fibres start from a tendon. The axial cavity of this tendon and the hypodermis which covers it show that its method of formation is by invagination of the tegument. Each fibre must be considered as being a cell with several nuclei. The *sarcolemma* of the fibre represents the cellular membrane. The tube formed by the *sarcolemma* is extended by a semi-fluid hyaline and homogeneous mass, into which the longitudinal and radiating filaments enter. The latter connect the longitudinal filaments together, and the semi-fluid substance serves as nutriment to the fibres bathed by it. Under nervous excitement the longitudinal filaments contract locally and in sympathy with each other, while the radiating ones are extremely elastic and support the others, in order to transport the nervous movement, and to bring them back to their original position after contraction.

Organes sensitifs de la mandibule de l'Abeille (Apis mellifera L. ♀ o).—M. Janet finds that the mandible of the bee possesses a collection of very varied organs. Besides the usual filiform organs he has been able to detect a large number of umbellate forms which do not appear to have been hitherto noticed. These are described and illustrated, and the author thinks them sensory organs of chemical perception, *i.e.*, special organs of smell, differing entirely from those in the antennæ. They probably come into use in connection with the elaboration of wax, and the collection of pollen and propolis.

Sur l'existenee d'un organe chordotonal et d'une vésicule pulsatile antennaires chez l'Abeille et sur la morphologie de la tête de cette espèce.—In 1894 the author described an antennal chordotonal organ of the ant, and since that time he has been studying the head of the bee, being struck by the close resemblance of its anatomical structure in both types of insects. M. Janet treats of the morphology of the head of the bee, and has now been able to show the existence of a similar chordotonal organ in the honey bee, and in this paper explains and illustrates this organ.

We have also received two other papers which refer principally to the muscles and adipose tissues of the queen ant.

AMONG THE BEES.

DELUDED BEES.

By D. M. Macdonald, Banff.

A paragraph has been going round the Press intimating that the bees down in Devonshire have been cheated by the recent fine, genial weather into the idea that spring had really come, and that they were, instead of being quiescent, roaming about practically all day and every day. All this, although very pleasant to both bees and bee-keepers, spells danger ahead! This unrest and excitement is attended by an undue consumption of stores, which may deplete the cupboard to a dangerous extent. The present remedy is a large cake of well-made candy, and the future cure should be a supply of warm syrup as soon as spring comes. Those who have spare stored combs can, without disturbing the bees, give them a frame containing natural stores, even now slipping it in beside the cluster. It is not only that the bees consume more food when in a state of activity than they would do if the usual condition of semi-hibernation in winter prevailed, but no doubt active breeding is prevalent in most hives, and this will still further deplete the amount of stored nectar. I can see another danger ahead. The amount of pollen being stored out of season will cause an undue amount to be stored. The mature bees will consume more of this flesh-forming food, with its large percentage of "residues," than is good for them and then, when the stormy weather that is certainly ahead confines them to their hives, there will, almost certainly, as a result, be a considerable amount of dysentery prevalent. Bee-keepers might take a timely warning; it may not do to "wait and see."

Winter Packing.—Light and porous material forms the best packing if we wish to assure ourselves that successful results will crown our efforts in endeavouring to make the bees as cosy as possible during the long inclement months of winter. The nature of the substance used means a great deal, but the manner in which it is applied counts to a very considerable extent. Several folds of blanket cloth were used in some test cases, but directly above some deal boards were laid. Below these the cloth in spring looked and felt quite damp, while the part not covered was dry and mildly warm. A quilt of American oil-cloth, inadvertently left on, felt sweaty, and had an unpleasant odour, while its original white colour had changed to nearly black. Some magazines were placed over the regular quilting, and in every one of these hives there was an unpleasant dampness. A bee-keeper once favoured me by experimentally covering several of his hives with

a deep layer of dry bracken over two light quilts, but thinking in his own mind that the material was too light and porous, he placed on some boards above to pack the covering down. Spring found the material damp and rotten below the hoarding, while in the others it was as dry as when placed in the hives. In the same way chaff-hay proved excellent packing when the material was left loose, but when weighted above, a mouldy, damp smell made itself manifest whenever the roof was removed, and the chaff when handled was soft and fast hastening to decay. These instances, which might be multiplied, all go to show that porosity is an essential to success. Bees do not hibernate during even the most severe winters. They burn caloric to keep up the internal heat, and this necessitates breathing through the pores, thus giving off carbonic acid gas. In a well-regulated hive this rises through the porous covering, and the attendant moisture is dissipated ultimately in the outside atmosphere. Where porosity, securing ventilation, is lacking, this moisture fails to find its way into the "attic" part of the hive roof, and is confined to the non-porous covering, or falls down to the floor-board, in either case doing mischief. The bees breathe an impure atmosphere and suffer accordingly, the sealed cells absorb this moisture, causing the contents to turn thin and sour, while the pollen decays and becomes improper food for both adult bees and larvæ. An undue accumulation of this moisture on combs, floor, or sides of hives chills the interior and makes the bees' lives a misery. In case of a severe frost the whole mass may indeed be frozen, causing the death of the colony. In less severe cases there is bound to be great discomfort for most of the cluster. Far more of the mysterious "spring dwindling," at times more prevalent than is generally recognised, is due to this cause. Leaky roofs will also produce like results. I would urge on all to examine the condition of the packing as soon as weather permits hives to be opened—even before it is safe to expose the bees themselves—and make sure the first thing in spring that your packing is dry.

Fussy Manipulation.—Don't, however, begin examining the bees at too early a date. I am one of those who believe that more injury is worked by over-manipulation than under-manipulation. Pulling up a plant by the roots to see how it is growing is not good for the plant. Opening up hives to see how the works are progressing is not good for the bees. Blowing clouds of smoke into the eyes of the busy little toilers cannot tend to make them more comfortable. Pulling frames apart to see trifling nothings must interrupt traffic, demoralise order, and upset well-matured plans. The "well-appointed commonwealth" has its laws, its government, its organised arrangements thrown out of joint, and any machine thrown out of gear cannot work smoothly. To the novice, therefore, I would advise: Never open up the hive interior unless you think there is something wrong which you desire to put right. When a colony is working its hardest in spring or summer, let it work. In spring, if heavy loads of pollen are being carried in plentifully that colony does not need your care. When after a spell of zero weather you find a colony eager to have a cleansing flight, set it down as a healthy sign. If you see dead bees in fair numbers only, and cell cappings thrown out on a genial day in early spring, look on that hive with a sense of content. In these and countless other ways judge of the interior without any desire to "see the wheels go round."

NECTAR PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(*Continued from page* 4.)

No. 14. THE DANDELION (*Taraxacum dens-leonis*).

NAT. ORDER, *Compositæ.*

This flower, so well-known to all, is of great utility, inasmuch as it provides in abundance both nectar and pollen. The honey obtained from this source is of a deep golden colour, though to my mind not over pleasant either in aroma or flavour.

The dandelion is called *Leontodon taraxacum* by some botanical writers, and in either names the allusion to a lion's tooth is very clear, dandelion being but a corruption or modification of the French "dent-de-lion," while leontodon means precisely the same thing in Greek, and "dens leonis" in Latin.

Why the plant should be associated with the lion's tooth has been the subject for several theories. One writer suggests it is because the root is so white, another that it is owing to the shape of its blossoms; for those who examine them closely will find that each part which forms the ray or flower head is long and strap-shaped like a tongue, and that the end breaks out into notches or teeth; but as the popular names of plants are derived from some feature more easily seen or some resemblance well presented, I think this will easily be found without having to uproot the plant or pluck its flower. The leaves of the plant will, I believe, supply the clue to the origin of the names. Its jagged form suggests this, and even more so the pointed lobes which well represent

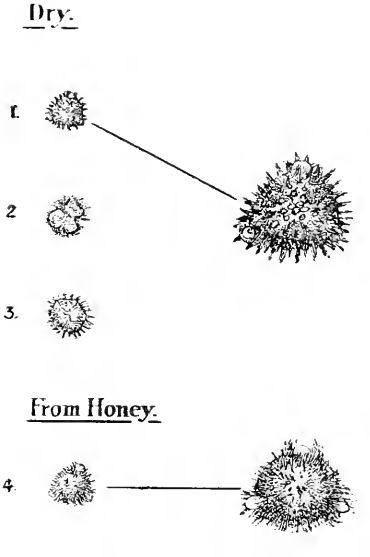
the form of the four conspicuous teeth—two in either jaw—of the lion.

The leaves of this plant are subject to considerable variation of form, in some cases they are deeply cut into segments, while in others the segments or lobes are a less conspicuous feature. The lateral lobes it will be noticed ordinarily point downwards in their general direction, unlike such features in the majority of plants where they will be found to point towards the apex of the leaf.

The plant may be found in flower almost all the year, and an hour of warm sunshine in the middle of the day even in late autumn will cause many flowers to expand and dot with golden stars the dull green of the fields, while those in the vicinity of hives will be favoured by visits from the bees; although its golden heads are more numerous in the earlier months of the year.

It is a perennial, and the long tapering root-stock penetrates so deeply into the ground that it is difficult to dislodge it. Each head of flower and each leaf springs directly from the root. Before the seeds are fully ripe the head is globular; when ready for dispersal owing to its silky whiteness, it forms a noticeable feature.

The plant is full of a bitter and milky juice, which forms a brown stain, when it comes in contact with the hand. The leaves when blanched lose their bitterness, and even in a green state form an agreeable addition to a salad. The roots are often roasted, and used as a substitute for coffee, and have a great medicinal value.



POLLEN OF DANDELION.

The pollen is of a deep amber colour when on the anthers of the flower, but when packed on the leg of the bee it assumes a deep orange colour. On the stage of the microscope it is, when viewed in its dry state a brilliant golden yellow.

The body of the grain is angular and covered with spines set thickly on it, and these latter give it when viewed in almost any position, an almost circular outline as seen at 1, 2, and 3 of drawings. No. 1 gives the general form of it, and seen better in the enlargement showing the three main facets from which the processes evolve their tubes. No. 2 is another view of the same grain which shows it apparently broken up into three lobes; and No. 3 another view, still of the same grain giving a hexagon outline to the body of the grains; but in all cases the spines give, as stated, an almost circular outline.

In size these grains vary very considerably, ranging from $\frac{1}{1000}$ to $\frac{2}{1000}$, owing no doubt to the profusion in which they are borne.

If they are placed in water and rolled about with a bristle their form will be better seen. Although this causes a very slight swelling of the grains it does not alter their forms materially from that in their dry state, if they are examined at once.

When taken from honey or other moisture in which they have been for some time, the grains and spines become saturated, and lose a good deal of their brilliancy, some becoming quite opaque. Each grain will have assumed a more spherical form, the processes will be more extended, and the spines will lie on its surface in clots or tangles; more especially about each of the three processes; as seen in No. 4 and its enlargement. If the grains have *not* been very long in the honey, but are fairly fresh—as, for instance, in new honey—they retain their original form, but are more transparent, so that both the upper and lower portions of the pellicle may be seen; the bottom through the top. A few also will retain their original form throughout, and in examining a sample of honey from this source, these may be frequently met with.

(To be continued.)

MOTTO FOR BEE-KEEPERS.

Look up, not down;
Look forward and not back;
Look out and not in;
And lend a hand.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

COTSWOLD GLEANINGS.

[8336.] Now that the year 1911 is a thing of the past, most bee-keepers will be turning their attention towards preparing for another season, which we all hope will prove as bountiful as the one now over.

Up to the present, conditions have been favourable for wintering, and even to-day (January 9th) pollen is being carried in by a colony which was deprived of its skep last autumn and shaken on to syrup stores. Cleansing flights have been frequent, and when watching hives I have often noticed that the bees from colonies fed with syrup food were less in evidence than others which were full of natural stores. From my experience syrup-fed stocks seem to winter as well as those provided with honey only, especially if the latter is of inferior quality. I have also noticed, if by chance the quilts on a colony become damp, or even saturated, it apparently winters in good shape, and if the damp wrappings are discovered and removed in the early spring no harm usually follows. I have in mind an apiary of Italians which wintered with no other covering over the bees than several newspapers most of which were saturated with wet, yet in spite of this the majority wintered safely. Possibly the strain of bee had something to do with it, for the hives were almost boiling over with bees in February.

Swarms were unusually scarce last season, no doubt owing to the empty cells being filled with honey instead of brood. During May most skeps became honey-bound, and failed to raise sufficient population to swarm, and therefore remained idle most of the summer. An intelligent skeppist would keep a watchful eye on his bees, and when a stock was noticed to be full, would place a skep, or better still, a frame hive beneath it. Few, however, do this, for they usually allow the bees to take their chance, and rarely give them a helping hand. My season's work commences by feeding all colonies as soon as the weather becomes settled and warm, and pollen is being carried in. The syrup is fed slowly to stimulate brood-rearing. This feeding is continued until the honey flow commences, when, of course, it is discontinued. The result is that my hives are overflowing with bees and brood, and all available space in the brood-nest is filled full of syrup stores. As soon as the honey-flow commences, supers are given; and with a tremendous force of bees secured by stimulative feeding, and a brood-nest already filled to its utmost capacity, the honey, when it does arrive, is thus forced right into the supers, because there is no place for it in the brood-nest.

Spring feeding pays beyond a doubt, and this plan often ensures a crop of honey in poor seasons. I have often wondered whether a hive with double walls and air space all round secures any better wintering results than one with single walls, which, in my opinion, has many advantages, being smaller and much lighter to move about. I possess both patterns, and up to the present have been unable to discover that a double-walled hive possesses sufficient advantages to warrant its adoption as the perfect hive for a large apiarist.

In my experience, colonies packed in single-walled hives with a sealed inner cover and air space above winter much better than others with an air space all round and absorbents above the bees. In concluding, I would like to wish the JOURNAL and all its readers a Bright and Prosperous New Year.—A. H. BOWEN.

"SKEPPISTS" AND LEGISLATION.

[8337.] The letter of Mr. R. B. Manley (8333), in your issue of January 11th, on the abolition of straw skeps, touches a point that will require a great deal of consideration by those members of the B.B.K.A. who will have the drafting of the future Bee Diseases Act.

I have been favoured with a copy of Mr. Tickner Edwardes' proposed Bill, as issued by the *Smallholder*, but this "Abolition of Skeps" proved a stumbling block. I brought the matter before several bee-keepers, who also spoke very strongly in opposition to it.

In this county (Lincoln) we have a large number of agricultural labourers who are enthusiastic bee-keepers (skeppists), but with their small weekly earnings cannot afford more than the cost of a straw skep, and, if this is abolished, they will be compelled to give up bee-keeping completely, because they will be unable to afford the expense of a frame-hive.

I am afraid that much more foul brood exists in frame-hives than in skeps. In the former the combs are often used year

after year, and the brood-chamber never lifted in order that the floor-boards may be cleansed, while in the majority of cases the skep does not remain longer than the second year without the combs being removed and the skeps thoroughly cleansed ready for a future swarm.

Besides this, where are we to go for the driven bees that we are all so anxious to get hold of?—R. N. CHAPMAN, Boston.

SPACE BEHIND DIVISION-BOARD.

[8338.] Some months ago I wrote you for advice in regard to the refusal of my bees to take to the sections; I think I then stated I had eight stocks. All hives occupied are made locally, and are of one size and pattern, with frames at right angles to entrance, but what I desire now to say is that when I started bee-keeping about six years ago, I was advised to have my hives made with bottom edge of sides rabbeted, and the division-board short at bottom, thus allowing the bees free access to the back of hive in case of over-crowding, and also as a preventive of swarming. Acting on the advice you kindly gave in "B.B.J.," I packed the quilts well down over the tops of section-racks, stuffing the covering well in the space behind, the result being that in two or three hives the bees half-heartedly took to the sections, but they also started comb-building attaching the top to the back of the lower rack, which, as I work for sections, only meant a loss of time to the bees, also of honey. Of course, it is very interesting to get a peep at the tired bees some hot evening, to see the little acrobats suspending themselves in ropes by thousands in the open space referred to. It is pleasing, too, to remember that one has done something to add to the comfort of the bees which they evidently appreciate, at times to the full.

Yes! but probably well hidden by the suspended living curtain there is another well-loaded comb some two or more days old, filled with warm nectar, which, when discovered, has to be ruthlessly cut out, which means a loss to both parties concerned. As I write, I am wondering if what is written is worthy of a place in the "B.B.J.," consequently worthy of consideration by my brother bee-keepers.

The Editor will doubtless be delighted to give his opinion and the result of his experience, but I also think the opinion and experience of those who have introduced the shortened division-board would be worth hearing. I wish I could believe all bee-keepers are sufficiently interested in their little friends to be ready to assist them to work in comfort.

Speaking to a bee-keeper not long since on the subject, I got what I venture to think is a slanderous reply. Said he, "I don't believe in giving bees space in the back of the hive; it gives them a chance to skulk; not only so, you can't see what they are up to." I therefore venture to suggest that those bee-keepers who have tried the shortened division-board should be invited to give their opinion as to its merits or demerits, my reason for introducing the subject just now being that the time for spring-cleaning will soon be here.

I always keep one extra hive, at least, on hand; I am thus able to go through the lot, transferring each lot of bees in turn into a clean hive. If, as the result of the discussion, the short division-board is proved to be a delusion, the opportunity will be afforded me to rectify matters; while, if it is proved a boon to the bees, it will give other bee-keepers an opportunity, when spring-cleaning, to give it a trial.

I may add I took from eight hives 300 sections last autumn, and had I not misjudged the capabilities of my bees I could probably have taken off much more, whereas I left the sections on too long, resulting in many of them having very thick walls and being badly stained by the feet of the bees.—W. R. HARRIS, Oxford.

[When the honey-flow is on it is a mistake to provide room for the bees at the back of the dummy where they build comb and store honey instead of placing it in the supers, which they will do if they have nowhere else to go. Like the old-fashioned bell glass supers, honey stored under such conditions is a great waste of the energy and work of the bees.—ED.]

PARTHENOGENESIS.

[8339.] I have to thank "A. B. H." for his correction (page 14) to my article of January 4th (page 5). The figures he gives are correct. I can only wonder how such an error crept into my calculations. At present I feel too diffident to air any theories based on these figures, but express the hope that someone more able than myself will do so.—D. WILSON, Belper.

THE MILD WINTER.

[8340.] As showing the very mild season we are having here in Devon, I am sending you some catkins picked to-day; I have also seen to-day a queen wasp flying. There is a lot of fragrant coltsfoot in bloom. The bees have been flying freely for several days, and are coming in loaded with pollen. I have examined a hive belonging to a neighbour of mine, in which the bees were dead. There was a large amount of stores left, so that they could not have

died of starvation. I am enclosing you a piece of comb, and should like your opinion of same.—C. W., Plympton.

[The comb is affected with foul brood of long standing.—Ed.]

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

The apiary we illustrate this week will have a particular interest for many readers, as it is located in the Isle of Wight, and has not escaped the visitation of that "bee scourge," which has caused such havoc in the craft for the past few years. It is pleasing to hear that the seven stocks remaining are "healthy and doing well." Mr. Parker's brief notes give a good idea of the trouble he has had, though he treats the subject in a spirit of optimism, which one cannot but admire. He says:—The photograph shows a part only of my small apiary. For some ten years past it has been my ambition to increase the number of my stocks to thirty. Several times my hopes in this direction have been raised very high, but the dreaded "Isle of Wight" disease has appeared, and I have lost all. I am still very hopeful of some day reaching that number, for the seven stocks I now have are all healthy and doing well, only two of them however are survivors from 1910. Both these latter swarmed, and I took off 120 well-filled sections from the two. My earliest recollection of bees is, when quite a child, seeing my father taking honey from skeps, and my being allowed to light the sulphur fuse. My first real bee-work, however, commenced when I was about nine years old, when spending a holiday on my grandfather's farm in the Isle of Wight. One Sunday morning during service time a stock swarmed, settling on a branch of the thorn hedge. I hived these myself without assistance, in fact no one knew of it until I had secured them, and in the evening I placed them in position on the stand. That was for me the beginning of the bee fever which has never died out. I now make all my own hives and fittings, using nothing but the best red deal. I am never more happy than when amongst the bees; it is a pleasurable hobby and a profitable one too.

MR. T. PARKER'S APIARY, WEST HILL, RYDE, ISLE OF WIGHT.

CARBOLIC ACID AND ITS USES IN BEE-KEEPING.

A Paper Read before the Crayford B.K.A. by G. H. Barnes.

The chemicals used in bee-keeping are not confined to the non-poisonous ones; in fact, some of the deadliest, as, for instance, cyanide of potassium, are frequently used in the craft. Carbolic acid and phenol is a well-known poison, and is probably responsible for more deaths than any other chemical, partly owing to its extensive use, and partly to the ease with which it can be purchased. Some of these deaths are accidental, but many of them are cases of suicide. A few words on the handling and storing of poisons will therefore not be

out of place in this paper. They should be kept in bottles rendered distinguishable by touch from ordinary medicine bottles (blue ribbed ones for preference), and there should be affixed to each such bottle a label showing the contents, with the word "Poison" in large type, the label being varnished over to preserve it, or renewed whenever it becomes nearly unreadable. Another additional safeguard is to use the patent indiarubber band, which must be taken off before any of the contents can be used, or the cork can simply be tied over with, say, red tape, or even string. The cork used by Calvert's with the sharp projecting serrated tin top, would not fail to tell anybody that the bottle they were handling contained something unusual.

The labelling, however, is much the most important, as not only does it prevent accidents but much waste, the average person not caring to use chemicals unless he is certain what they are, and this he cannot be if he has a number of bottles stored in a damp shed all the winter, when the labels drop off, or the ink fades so that it is unreadable. It is hardly necessary for me to say that they should never be kept in papers, a bottle or tin being much better and handier in every way. For keeping volatile chemicals, such as naphthaline, camphor, thymol, &c., a lever lid tin is a very good receptacle.

Carbolic acid or phenol is probably the most frequently used, and also the most important chemical to bee-keepers. Its preparation and general uses will not be out of place in this paper. It is chiefly obtained by the destructive distillation of carbonaceous substances, such as wood or coal, phenol being one of the liquid products present in the tar formed. It is separated by distilling coal tar, the portions boiling from about 150deg. to 240deg. C., being shaken with caustic soda, which dissolves the phenols, leaving an insoluble residue of hydrocarbons. The solution obtained is separated from the latter, and the phenol set free by the addition of sulphuric acid. It is afterwards purified by fractional distillation, the portions which pass over at 180deg. to 200deg. C., crystallising when left for some time in a cool place.

Calvert's No. 5 acid is not pure acid, but is said to be a concentrated mixture of refined carbolic acid and cresylic acid, and which in correspondence with them they say has at least one-and-a-half times the disinfecting power of phenol.

Pure phenol, or carbolic acid, crystallises in long, colourless crystals, having a specific gravity of 1.09, and melting at 42deg. C. and boiling at 183deg. C.; the commercial product forms a crystalline mass, which turns reddish in a short time, and in contact with moist air deliquesces to a brown liquid. It is soluble in about fifteen parts of water, and much more so in methylated spirit. If the acid be melted, and one part of water be added to ten of acid, it remains liquid, except in very cold weather, and is then known as liquefied carbolic acid. A small percentage of glycerine is probably even better than water for this purpose, and also has the advantage of keeping the subduing cloth in a damp condition for a longer period when used to dilute the acid for moistening the cloth instead of water. Phenol is distinguished by a characteristic smell and a burning taste. It has a caustic action on the skin, and is a powerful poison. If a drop falls on the skin, the latter turns white, and unless oil is quickly applied it leaves a sore spot, which somewhat resembles a burn. It rapidly destroys organised ferments (microbes, &c.), and is thus a powerful antiseptic. The presence of even minute quantities of this compound arrests fermentation, and putrefaction. It is applied, therefore, in the crude form for disinfecting and deodorising purposes, destroying the infection of cattle plague, killing the bacillus of foul brood and other diseases. It preserves hides and other animal matter. The protection of wood by pickling in coal tar creosote is also largely due to the action of phenol. The legs of hives are sometimes treated in this way, or ought to be. In the pure state, diluted with twenty to forty parts of water, it is also extensively used in the surgery as an antiseptic lotion for wounds, and to disinfect the surgeons' hands and instruments, as well as in dressings, chiefly lint and tow. It was one of the first antiseptics used by Lister in the form of a spray internally. In small doses, taken by the mouth, it stops fermentative changes in the stomach. In the form of ointment it is very useful, keeping wounds clean and inducing them to heal up. Small amounts of it are used in special ointments for skin diseases. From its properties just enumerated, you will see that carbolic acid has the property of preserving substances from decay by killing bacteria and spores which would cause decomposition. It will, therefore, be clear that if a hive is washed with carbolic solution thoroughly it will have a tendency to clear it of the bacillus and spores of the various bee diseases, but where disease has actually appeared it cannot be considered so efficient as the painter's lamp, which removes the paint and reaches every possible corner. Carbolic acid should, however, be very efficient if, say, No. 4 acid be painted all over the hive inside and out with a paint brush, taking care to get into all the corners, and thoroughly washing it off in, say, twenty-four hours,

afterwards allowing the hive to stand in the sun until the smell totally disappears. Any crevices would make this treatment uncertain, as the acid might or might not, get to the source of infection in the these, or if it got into the crevices and so between the double walls, it would be difficult to get rid of, and a hive could not be used for bees until this has been accomplished. The reason I mention No. 4 here is that the smell is not retained nearly so much as in the case of No. 5.

Poisoning.—A strong solution of carbolic acid taken in at the mouth acts at once on the mouth, throat, and stomach as a caustic poison. It enters the circulatory system, and acts upon the brain as a narcotic, the victim becoming comatose and cold. Should the person recover from the first effects there is still danger of suffocation, owing to subsequent swellings of the air passages. The first thing in treating poisoning by carbolic acid is to rid the stomach of what has not already been absorbed by means of a soft syphon tube, and then wash it out until no acid is left. Half an ounce of Epsom salts may be given in a pint of warm water, and after this a quarter of a pint of olive oil in a pint of warm water, or white of eggs in water, or large quantities of milk, keeping up the warmth of the body by hot-water bottles, &c., and using alcoholic stimulants if necessary. It would only be possible for a medical man to do the first operation, but the Epsom salts, oil, &c., could be given, and the patient kept warm until he arrived and took the case in hand. The carbolic acid recommended in the "British Bee-keepers' Guide Book" is Calvert's No. 5, which is extremely pungent, and contains a large amount of cresylic acid, and does not mix readily with water in the proportions recommended. In correspondence with Messrs. Calvert and Co., they say that "no quality below our No. 4 in purity should be used." No. 4 contains 90 per cent. of pure carbolic acid, and is much less pungent than No. 5. One part dissolves readily in water. This certainly seems to be a more suitable preparation, and is only slightly more expensive than No. 5. Messrs. Calvert also make a tablet of soap containing 20 per cent. of carbolic acid, which would be useful for washing hands and tools after handling a diseased stock.

The two uses of carbolic acid in bee-keeping are for subduing bees and for disinfecting the manipulator, hives, appliances, &c. It is very useful for the former purpose, when a smoker is not handy, a small tin containing a control cloth being carried in the pocket. From my experience it acts quite well, and if used properly, does not seem to have any exciting effects upon the bees. If the hands are wiped with it previous to manipulating, the tendency of the bees to sting the hands seems to be diminished. The "Guide Book" recommends the use of No. 5 acid for this purpose, but personally I object to the smell this leaves behind after the acid has evaporated. It occurred to me that this particular smell might have something to do with the subduing effect, but on trying the No. 4 acid the effect was apparently just about the same, without leaving the objectionable odour on the hands. The pure acid, which has very little smell indeed compared with this, is also quite satisfactory in this respect. No. 5 acid can be used for cleansing purposes, in which case it is better to make a strong solution of soft soap, and shake the acid with it, when it will emulsify, and this solution can then be added to water as required, when it will mix easily, and there will be less likelihood of the hands being burnt by the acid—a risk always run by the method of mixing crude acid with hot water as the strong acid floats on the surface and comes into contact with the hands.

From the experience I have had with the various acids, I have no hesitation in recommending the use of Calvert's No. 4 acid for both subduing and disinfecting, in preference to No. 5, the increase in cost being infinitesimal only a small amount being used in the course of a season. I do not think the pure acid has any advantage over it for these purposes, but should like to hear the views of others who have used the pure acid. I trust that the matter in this paper not directly bearing upon bee-keeping is not wearisome, but that it will be of interest by pointing out what seems to me to be some of the many wonderful properties of carbolic acid.

Queries and Replies.

[8271] *A Novice's Queries.*—I am a novice at bee-keeping. I got a swarm of bees in July last, and have since purchased another hive with bees, and am making two others. I have also made eight shallow boxes and frames and should like to know: (1) How do you fix the foundation? Should it be sealed in any way? (2) Is enclosed sample the right kind of foundation? (3) I sent for one fitted frame with foundation, but the latter got a good piece broken off one end in the post. Do you think that the bees would draw this out the same as the other end, or is it of no use? (4) Would you advise using drawn out combs,

or the one that I have sent to you?—Wishing the JOURNAL every success.—T. W., Renfrew.

REPLY.—(1) There should be small slips of wood with the frames like the one you send. The foundation edge is put in the central groove and fastened by forcing the slip of wedge-shaped wood into the other groove (see pages 73 and 74 of "British Bee-keepers' Guide Book"). It is well to wire the foundation as well, particulars of doing this being also given on page 74 of "Guide Book." (2) The foundation sent is not the right kind, being super, and is for sections only. You should ask for drone-base foundation for shallow frames. (3) If it is a shallow frame comb will be all right, the bees will draw it out, but if it is a brood comb don't use it, or the bees will build drone combs in the space left by the breakage. (4) It is best to use drawn-out combs in the super as it saves the bees time, labour, and food.

[8272] *Moving Bees.*—I wish to move seven stocks of bees in hives a distance of about eighty miles. Furniture vans are being employed, and I propose bringing the bees down on the top (outside) of these. Will it be sufficient ventilation if I remove the entrance slides and tack perforated zinc over the entrance? Should some of the quilts be removed from above? I shall be much obliged if you will answer the above in the "B.B.J."—G. S. B., Knutsford.

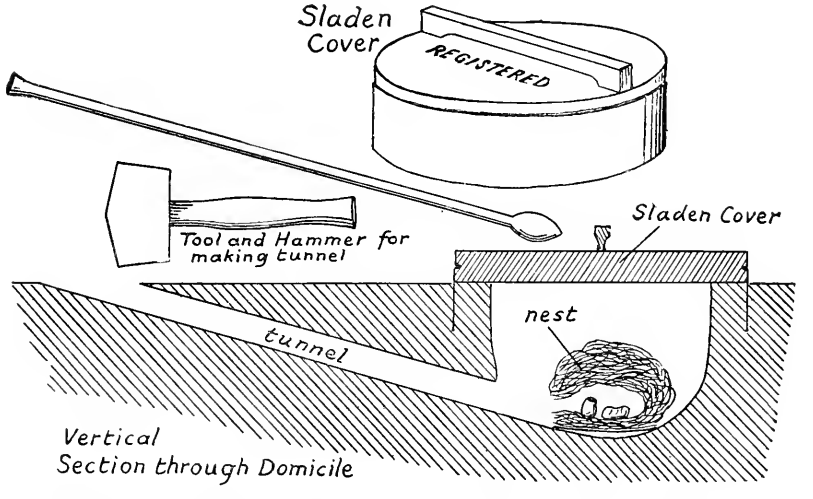
REPLY.—The bees will travel safely as you propose. Be careful to see that the quilts fit so that it is impossible for the bees to escape. To ensure this we should screw strips of wood on all four edges of brood-chamber over the quilts.

NOVELTY FOR 1912.

SLADEN'S DOMICILE FOR HUMBLE-BEES.

By means of this device, queen humble-bees may be attracted to make their nests in the garden, and there to establish their colonies, which contain ultimately up to 200 or 300 workers. The queen humble-bee is a very industrious and intelligent insect, and takes as much care of her young as a bird or mammal; thus she makes a most interesting pet. The domicile affords facilities for studying every stage of the life history of the humble-bee, which differs widely in many of its details from that of the honey-bee. Humble-bees gather honey and store it in the vacated cocoons, and also in special honey-pots made of soft wax.

The apparatus supplied consists of the Sladen Registered Cover (price 4s. 6d. per pair, postage 6d.; at least two pairs are recommended), and the tool for forming the tunnels in the ground (price 4s. 6d., postage 6d.). With these the domiciles can be easily made according to the directions that are sent out.



The domiciles have undergone two seasons' trial in Ripple Court Apiary, near Dover, and have proved very successful in attracting queens of *Bombus lapidarius*, the beautiful, large, red-tailed species which is specially suited for domestication. The queens of five other species, *B. terrestris*, *ruderatus*, *hortorum*, *latreillellus* and *sylvarum*, have also been induced to establish their colonies in these domiciles. A queen humble-bee never attempts to sting except in self-defence, when she is actually laid hold of.

The articles may be obtained from Mr. F. W. L. Sladen, Ripple Court Apiary, near Dover.

Notices to Correspondents.

T. (Berks).—*Bee-keeping in Egypt.*—(1) There are several letters referring to bee-keeping in Egypt in the volume of B.J. for 1894, and also in *Record* for the same year. An article by Mr. Ph. J. Baldensperger of Nice will be found on page 455 of B.J. for 1894, and another entitled "Apiculture en Egypte" by the same writer appeared in the *Apiculteur* of Paris for 1893 page 346. (2) We cannot give any information about appliance dealers either in Cairo or Alexandria, but perhaps some of our readers could do so, and we should be glad to hear.

W. H. (Gateshead).—*Several Eggs in One Cell.*—Though unusual, it is not rare to find so many eggs in a cell. Yes, you were wise to deal with the diseased stock as you did. It was quite the right thing under the circumstances.

Jack Shepherd.—*Source of Pollen.*—The catkins you send are good pollen-bearers. In the district you describe you could keep about 25 colonies with good results.

H. G. B. (Shelley).—*Position for Hives.*—(1) The bees are English natives. (2) So far as we can tell they are healthy. (3) We prefer the second position; the first will be too hot for the bees.

B. A. (Middlesex).—*Uniting Skep to Frame-hive.*—As soon as possible in the spring examine the frame-hive to make sure there is no queen there. If not, then drive the skep and unite the bees. In the meantime, to facilitate matters, place the skep at once beside the frame-hive, so that the bees will locate the position.

Honey Samples.

A. D. (Cheshire).—The sample is evidently foreign and of very poor quality.

A. J. Smith (Suffolk).—The honey is from sainfoin, good in every respect except density, which is only fair.

J. C. Stebbings (Hillborough).—A very good sample. We should say 56s. per cwt. in 5cwt. lots. In gross lots of 11lb. jars, 9s. 6d. per dozen.

R. W. B. (Gloucester).—The honey is from clover with a little from ragwort or beans in it. A very good sample of dark honey.

Doubtful (Jersey).—No. 1 is a very good dark honey from mixed sources. No. 2 is a medium honey, good in all respects except density, which is poor.

Suspected Disease.

W. J. R. (Edenbridge).—(1) We regret to say it is "Isle of Wight" disease. (2) Burn the whole. (3) We are afraid not.

F. H. W. M. (Surrey).—Both varieties are suffering from "Isle of Wight" disease.

G. W. C. (Kent).—No. 1 and 3 had died from "Isle of Wight" disease. No. 2 were too dry for examination.

S. G. (Berks).—Bees have died from "Isle of Wight" disease. Destroy them.

D. A. B. (Reading).—We regret to say that the bees show every symptom of "Isle of Wight" disease.

G. B. L. (Market Drayton).—The bees have indications of "Isle of Wight" disease. Send some alive to Dr. Malden, Medical Schools, Cambridge, for his opinion.

H. M. (West Ealing).—The bees appear to be suffering from "Isle of Wight" disease.

J. S. (Bristol).—We cannot find any trace of foul brood. The bees are suffering from "Isle of Wight" disease, and a number have also died from starvation.

W. M. (Bristol).—There is foul brood in the comb, but the bees are also affected with "Isle of Wight" disease. Some have died from starvation.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

WANTED, good Standard Hive and quiet Bees, guaranteed healthy; carriage paid Dinmore; lowest cash.—MODEL HOLDING, Bodenham, Herefordshire. r 97

BRAND new Brice Observatory Hive, maker, Lee and Son, 18s.—IVE, Boughton, Newark. r 96

2 DOZEN SECTIONS HONEY, from mixed sources, 8s. 6d. per dozen, carriage forward.—PHILIP JONES, Blakeney, Glos. r 98

GRAND CLOVER HONEY, in 1lb. screw caps, 8s. 6d. dozen, 3 dozen 25s.—F. W. GELDER, Sturton, Lincoln. r 99

RELIABLE SEEDS.—Chapman's Honey Plant (Echinops), large packet, 6d.—GEORGE BELL, Shoreham, Sevenoaks. r 100

SPECIAL OFFER.—Yorkshire Heather Honey, 9d. per lb., 14lb., 28lb. tins; sample, 4d.; Deposit.—J. B. MARSHALL, Garforth, near Leeds. s 1

3 CWT. good, light coloured Honey, in 28lb. tins, 56s. per cwt.; tins free; sample, 3d.—POMFRET, 28, Bedford-street, Blackburn. s 2

BUSINESS ENCYCLOPÆDIA, perfect condition; offers cash or bee line.—PURVES, Mundesley, Norfolk. s 3

3 CWT. good Light Honey, 2 dozen good Sections; accept any reasonable offer.—CHARLES SMITH, Wattisfield, Diss. r 93

BEES FOR SALE, 16 Hives and all appliances, take £18 or the nearest offer.—Apply to R. ELLIOTT, Beanley, Eglingham, Alnwick, Northumberland. r 94

12 DOZEN jars Clover Honey, 9s. per dozen; sample, 2d.—J. WAKEFIELD, Papcastle, Cockermouth. r 95

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, January 18th, 1912, at 23, Bedford Street, Strand, London, W.C., when Mr. T. W. Cowan presided. There were also present Messrs. W. F. Reid, T. Bevan, J. Smallwood, E. Watson, C. R. Frankenstein, and R. Andrews (Affiliated Association Delegates), G. W. Judge (Crayford), G. R. Alder (Essex), A. Willmott (Hertford and Ware), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Miss Gayton, Rev. A. D. Downes Shaw, Messrs. H. Jonas, C. L. M. Eales, A. G. Pugh, J. B. Lamb, E. Walker, and Capt. Sitwell.

The minutes of Council meeting held December 21st, 1911, were read and confirmed.

The following new members were elected:—Mrs. F. Wallace, The Rock House, near Tiverton; Mr. U. P. Falle, Le Vallon, Grouville, Jersey; Rev. C. Gordon Ward, North Mymms Vicarage, Hatfield; Mr. A. Jenner, 52, Weverton Road, Sydenham; and Rev. J. G. Shotton, Doddington Vicarage, Wooler.

Applications for affiliation were received from the Bedford and the Herefordshire Bee-keepers' Associations and both were granted.

The report of the Finance Committee was presented by Mr. J. Smallwood. The balance in hand at the end of November was £135 9s. 8d., and the payments recommended amounted to £138 16s. 10d. The balance in hand at end of December was £135 9s. 8d., and it was resolved that payments amounting to £10 be made. The audited balance sheet for 1911 was presented, showing a balance in hand of £125 13s. 8d.

Mr. Smallwood moved pursuant to notice:—"Recognising that the money vote of the Development Commissioners was obtained on the basis of the details furnished to them, and that the recurrence of this grant is an important factor in any reorganization scheme, it is the opinion of this Council that it is not advisable to discuss any other arrangements until a reasonable trial has been given to the scheme."

Mr. Frankenstein seconded and it was carried unanimously.

The alteration of conditions of affiliation to meet the peculiar conditions existing in South Africa were submitted by the sub-Committee appointed for that purpose and agreed to.

Next meeting of Council, February 15th.

REVIEWS OF FOREIGN BEE JOURNALS.

By Nemo.

The Management of Supers.—We often hear the complaint by bee-keepers that they had put on supers which the bees refused to occupy. M. Barthelemy says in *l'Abeille de l'Aisne* that bees do not readily go into supers if (1) the population is not sufficiently strong; (2) when there are no combs to attract them; (3) when there is no flow of nectar, or the yield is on the point of ceasing; (4) when frames in the hive body are too deep; (5) when ventilation is insufficient; (6) and when the supers are not sufficiently protected by covering, or the temperature is too low. Sometimes notwithstanding favourable conditions some colonies hesitate to work in supers. They can be induced to do so by cutting out from the body box a comb which contains very young brood, and by placing it between two of the combs in the super. It is also important to maintain the heat in the supers by warm coverings if the temperature is likely to go down. Supers should be put on when the population is well provisioned and has attained its full strength, that is to say when the outside combs are well covered with bees, and it is better to put them on too soon than too late. When all other conditions are favourable the development of the colony may be retarded by the failure of the queen in egg-laying just when most needed. This is why it is important that the bee-keeper should know the age and capabilities of his queens, which are destined to assure the future prosperity of colonies.

Intelligence in Bees.—Professor Gaston Bonnier has been making observations respecting the distribution of work among bees, and we read of the conclusions he comes to in the *Revue Eclectique d'Apiculture*. One of the observations was made at a time in summer when there was hardly any flow of nectar. He took ten flowering branches of *Lycium barbarum*, commonly known as Tea-plant, which is a good melliferous plant, and put them in jars of water which he placed in his garden on a spot where there were no plants visited by bees. Being in water the flowers on these branches yielded nectar in abundance, much more so than those on the growing shrub. By the renewal of the branches and the water the production of nectar in the flowers could be maintained for several days. On the first day no bee visited the flowers, but on the second day an investigating bee discovered them. M. Bonnier marked this bee with a coloured powder, and found that she returned to the flowers after a few minutes,

becoming from that time a regular forager, and drawing the nectar from two or three flowers, returned from her hive after storing it accompanied by a second bee, which the experimentalist also marked. After twenty minutes five bees were visiting the flowers on the branches, but there were no more. These marked bees were always the same and kept going to and fro all the time. Four of them collected nectar, while the fifth, which was always the same one, was engaged in collecting pollen from the stamens of the blooms. On the next day he found the same marked bees at work again. The curious part of the experiment was to see the behaviour of the bees from this or other hives who were out investigating, when they in their turn discovered these flowers and found other bees engaged on them. It was easy to notice them flying round the branches, looking about and then returning to their hives, coming back to the branches and finally disappearing, as if they had satisfied themselves that there were sufficient foragers to collect all the nectar and pollen which the flowers yielded.

The same afternoon M. Bonnier replaced the ten branches by twenty other similar ones. At ten o'clock the following morning work commenced, and in addition to the five marked bees of the day before, six others had now joined them. Of the eleven, two collected pollen and nine nectar.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

PROCURING SURPLUS.

(*Continued from page* 12.)

There are several other ways of removing supers which with practice and experience the novice will soon learn how to carry out. For instance, if the supers are left on until the end of the season the bees will gradually leave them to concentrate in the brood chamber. At that time of the year, if one rises about 4 a.m., the majority of them can be removed without a single bee being inside. Another method is to tilt the super with one hand, and slide the "Porter" bee-escape underneath it with the other. If this is done carefully and the board kept tight down on to the top bars of the frames not a single bee will be killed, as the board in its progress forward presses against the bees and naturally they run out of the way. When supers are being lifted otherwise than with the screwdriver they should always be twisted first to break away brace combs or the attachment by propolis which may occur. Sometimes they are stuck down so tightly that it is almost impossible to move them by either lifting or twisting with the hands. In such cases a sharp knock, cornerwise, will generally liberate them. This can be done with a brick, or failing everything else I use my heel. In such cases care must be taken to subdue the bees properly first, or the result will be disastrous.

Probably the best method for the novice to adopt is, as far as is possible, to prevent propolization. This can be accomplished by using vaseline. The thinnest possible coat should be spread on all those parts of the super that will come in contact with the chamber below it.

For removing supers the subjugator I prefer is smoke; used judiciously this will not taint the honey. If a carbolic cloth is used, being damp as it should be, there is danger of the honey being contaminated. Many good samples of honey have I seen spoilt in this way. In removing sections, as little subjugation compatible to the work in hand (which should only take a few minutes) should be carried out. If it is overdone, or the work prolonged, the bees will puncture the cappings with numerous small holes to get at the food, and the value of the sections, if not spoilt altogether is considerably reduced.

In previous notes I have mentioned ventilation with regard to the prevention of swarming. To obtain the best results, swarming must be prevented, and this can usually be accomplished by giving attention to details. Position of the hive is one factor, but this I will leave to deal with in the future. Ventilation in very hot weather is absolutely necessary. This can be given by turning the roof cornerwise, but it is necessary for one to be close at hand; should a rain storm come on the roof will have to be put right to keep out the wet. Also it means attention each morning and night. The best method of giving ventilation is by propping up the brood chamber all round as shown in the illustration on opposite page. If we examine a natural home of the bee in a tree or other position, we find that ventilation is always obtained at the bottom. On no account must we ventilate by means of a draught right through the brood chamber or the brood will be chilled; therefore the method recommended avoids this. As soon as nectar ceases to come in, the hive must be lowered or robbing will take place.

At the present time of year, and especially as the bees have been very active, it is necessary to see that the supply of candy is not exhausted. Also the entrance should be cleared of dead bees by means of a hooked wire.

(*To be Continued*).

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ABSORBENT *v.* NON-ABSORBENT COVERINGS.

GLASS QUILTS

[8341] On p. 21 of the issue of the 18th inst., "D. M. M.," under the heading "Winter Packing," says: "Light and porous material forms the best packing, if we wish to assure ourselves that successfull results will crown our efforts in endeavouring to make the bees as cosy as possible during the long inclement months of winter," and then proceeds to give a number of instances which he says all go to show that porosity is an essential to success.

Three pages later (p. 24), Mr. A. H. Bowen (8336) writes: "In my experience, colonies packed in single-walled hives with a sealed inner cover, and air space above, winter much better than others with an air space all round, *and absorbents above the bees.*"

In "Root's A.B.C. of Bee Culture," the question of sealed or porous covers is discussed (p. 469, 1908 edition), and preference is given to "a non-porous cover, like a thin board or a sheet of enamel cloth, which the bees may seal down with propolis," and the reason given is that "the very fact that Nature supplies bees with a glue for chinking up all cracks and crevices, and that they use this gum to an extent that the top of their domicile is made air-tight, shows that we, their owners, should cater to their, or Nature's, ways."

Mr. Simmins, in his "Modern Bee Farm," says, on p. 184: "If you use porous material above your winter cluster, an entrance not more than 3in. should be allowed; if a non-porous covering, such as American cloth, be used next above the frames (of course, with warm material above that), then a wider entrance must be provided, according to the strength of the colony."

HELPFUL HINTS TO NOVICES (VENTILATING A SUPERED HIVE).

At the conversazione of the B.B.K.A., held on October 6th, 1910, in discussing "The Preparation of Bees for Winter," Mr. W. F. Reid said: "For himself, he used celluloid quilts; no moisture got into the wrapping or to the bees themselves, and, personally, he had never had any trouble in this respect. . . . One of the advantages of celluloid was that it was perfectly watertight. He had used some of these quilts for the last ten years, and they were as good as ever. . . . He had no trouble with condensation at all, and,

if there were plenty of quilts on the top, it would not be cold enough for moisture to condense, which only happened if there were not enough bees."

I am a comparative novice in bee-keeping, having bought my first stock in the spring of 1908. The idea of a glass quilt occurred to me, as it, no doubt, has occurred to hundreds of other bee-keepers. I had no brother apiarists to consult, and for the first two years "ploughed a lonely furrow." I first designed and made a frame to hold two sheets of glass, ⅛in. apart, with a central opening in each, 3in. in diameter, a ½in. space from the margin of the circle being fitted with glass, fixed with Canada balsam, so that between the two sheets there was enclosed a dead air space. This arrangement, costly and clumsy, was subsequently modified, and I made frames, like ordinary school slate frames, to hold a single sheet of 21oz. glass with a 3in. hole in the centre, which, when placed in position, allowed a bee space over the frames. A 5in. square of glass covered the hole, except when I slid it to one side, for feeding purposes. These quilts have answered their purpose admirably, and I have never lost a stock through their use, to the best of my knowledge. I cover the glass summer and winter with at least four thicknesses of 3-16th-inch felt. This felt covers not only the glass quilt, but goes fully to the sides of the lift. The advantages are numerous. To begin with, it obviates a considerable amount of otherwise necessary examination and disturbance of the hives, the very thing against which "D. M. M.," in the notes from which I have quoted, protests, and, in my humble judgment, rightly protests.

It enables the bee-keeper to tell just when to put on his supers as soon as he sees the white additions to the brood-combs being made. He can also see when to add a fresh super. It reduces the necessary manipulations from spring to autumn to three: spring examination and transfer to a clean hive, requeening in July, and packing for the winter. I exclude, of course, the placing and removal of supers, and the manipulations consequent on swarming, or any unusual or untoward incident or accident. In this connection I may mention that for nearly a year I have had a delightful correspondence with a bee-keeper, whom, as yet, I have never had the pleasure of meeting; one of at least twenty years' standing, and the owner of some twenty-six or twenty-seven stocks. He was wholly opposed to glass quilts, but I persuaded him to let me send him one this summer. Here are his remarks on the subject:—"I am sure you will be pleased to know the result of the glass quilt. . . I put it upon my strongest hive, and worked it for sections. This hive had ten standard frames, and also ten shallow frames, as brood-nest . . . and at one time it had sixty sections on, in addition, and all were filled with bees. Beyond the glass quilt, the only covering was a piece of brown paper to exclude the light. . . I took special interest in this hive . . . it did the best of all my twenty-six colonies; it gave me ninety completed sections with about 35lb. to winter on as stores. Up to the present (November 15th), I have not removed the glass quilt. . . . I examined it last Saturday, and, up to the present, there are no signs of any condensation upon the glass. For the summer it was a perfect success." I ought to add that my correspondent intended to remove the quilt for winter, but this year I hope to persuade him to give it a winter trial. The advantages in winter are quite as great as in summer. Candy can be supplied with no disturbance whatever, and as quietly renewed. I wrote to the "B.B.J." in May, 1910 (7824):—"At any time, and almost at any temperature, I can remove the felt quilts, and glance at the condition of the bees, and gain a pretty fair idea of the quantity of stores, without disturbing the cluster in the least." I asked then, as I ask now: "Why are glass quilts not more used? What are the drawbacks outweighing their manifest advantages? Or is it the innate ineradicable conservatism of the Briton which prevents him adopting them. After all, which is the nearer to Nature, the combs covered with unbleached calico, carpets, and sacking, and a bag of chaff, or a solid and more or less impervious material? The combs in a hollow tree are hung from the top of the hollow, the mass above being solid wood." The Editorial note at the end of my letter stated that the great objection to glass quilts was the expense, and a habit the bees had of propolising them firmly down, and that when being removed they were liable to break. My answer to these objections is: first, that I make (and so can any man with a few ordinary tools) the frames myself at a cost of, say, 2d. for wood, and buy the glass, and get the hole cut for 1s.; and secondly, that the frames, in which the glass is inserted, have never, in my experience been propolised down, so as to cause even a risk of breakage.

Is there not something in Mr. Root's suggestion that the very nature of the hive bee is such that it resents, to the best of its ability, the porous covering, and spreads its propolis over as large a surface of it as it can? Listen to the doyen of bee-keepers, Mr. Cowan, at the very conversazione to which I have referred: "For coverings he removed the old calico quilt, that was propolised, and

placed a fresh piece of calico, which would be porous, over the frames." If porosity were essential, or even advantageous, why should the silly bees go to work and make it impervious as far as they can? Simply because for thousands of years they have been accustomed in their wild state to have a covering absolutely impervious.

The Scots are a dour race (I am one myself), and "D. M. M." may hesitate to accept the offer I now make. Will he accept, at my hands, a glass quilt, of a size suitable for his hives? Will he, further, use it both spring, summer, and winter? I know from his reputation in the apiarian world that we can rely on an honest opinion on its merits and demerits. I need hardly add that I have no commercial interest whatever in the bee world, not even in the sale of honey, but am merely an enthusiastic recruit in the growing army of apiarists, and am anxious to do all that lies in my power to gain as well as impart all the knowledge I can in this most fascinating pursuit.—J. DALZELL.

HEATHER HONEY AS A WINTER FOOD FOR BEES.

[8342] In his New Year's address our esteemed Editors appealed for new writers. It gives me much pleasure in responding.

Quite recently, and for the first time to my knowledge, the suitability of heather honey as a winter food was called in question by one of our most prominent bee-keepers, Mr. Simmins, who stated that the unsuitability of this particular kind of honey was most apparent when the month of February is reached and that it arose from lack of moisture. My own experience is quite opposed to Mr. Simmins' theory. Here in the extremity of North-West Durham we are in the midst of the heather country, the storage for winter consists almost entirely of heather honey—clover being almost a negligible quantity. After an experience of many years, I can say that my bees have never suffered any evil effects from the use of heather honey; and this much I can also say from previous experience, if my bees reach the month of February in good condition their prosperity for the following summer is assured. My object in writing this is to ask other bee-keepers living in heather districts to give us the result of their experience on this important question.—W. P., Blanchland.

ROSS-SHIRE NOTES.

[8343] In this district bees have had occasional flights of late, every one of my hives showing signs of life, but 'tis rather early yet for the roll call. Perhaps, as was the case two years ago, the real winter is still to come. A zero freeze in January, 1910, wiped out our medium colonies, and converted strong ones into mere shadows of their former selves. On that occasion the situation was saved by uniting English swarms to the weaklings, the result being a fairly successful season.

The post-result, however, was an outbreak of paralysis among the imported bees in the following spring. This deadly peril, starting in a single colony, rapidly became a distinct menace to the very existence of the apiary.

Extreme measures applied to the source of infection, and "Heathfield" remedies in the milder cases, dispelled the gloomy cloud that overhung my little Highland apiary. In this case the darkest hour was followed by the dawn of a record season. The sun seldom before shone so brightly on the busy little bee during its industrious labours from morn to eve of the long summer's day.—J. M. ELLIS, Ussie Valley.

SPACE BEHIND DIVISION BOARD.

[8344] A correspondent (8338) in last week's "B.B.J." (page 25) invites comments on the respective merits of shortened versus close fitting division boards. I should like to state the case as I have found it, first mentioning that most of my hives have frames parallel to the entrance—not as with Mr. Harris, at right angles. With me the bees winter better that way. The chief advantage of the short division board I find is that it acts as a barometer, showing when the bees need either more brood space or comb-building work. When they show themselves crowded at the back of the board I add more frames on the inside, fitted with full sheets of foundation if in the early part of the season, as the queen, if a good one, will easily fill all with brood at this time. Last season I had a hive with three supers on, and the queen occupying eleven brood frames and ten shallow frames, only the outside combs being used for storage. If bees are crowding out late on in the honey season, I give frames with starters at the back of the boards, and what little they draw out and store in these I use for home consumption; being so much cut off from the brood nest they seem to prefer to do most work in the supers, where it is wanted, than work on starters at that time. After being away for three weeks, I examined one stock on eight frames in late June and found a good-sized swarm hanging out at the back of the dummy waiting for the queen cells within to mature. I suppose,

Had I examined them sooner I should have at once added more frames inside for comb building and brood rearing. No comb was started behind the board, although the super was almost full. Again, the loose fitting board allows the cleaning up of combs removed from the brood nest in autumn, or emptying unfinished sections, by placing them behind the board, with no necessity for a super above the brood nest. If Mr. Harris does not want to increase the size of the brood nest, and bees are numerous at the back, he should use a hanging section frame at the back of the board, an excellent way of obtaining bait sections for the supers. —C. R. P., Yorks.

WINTER LOSSES OF BEES.

[8345] Now that the winter season is here and our bees, except for occasional short flights, are confined to their hives, we often wonder how it fares with the little occupants. Having packed them snugly down, and attended to their needs, ere the rigours of winter approached, we are now beginning to look ahead with anxiety as to how our stocks will emerge from their winter quarters when the period of their enforced idleness is passed. The essentials of safe wintering are plenty of bees, ample and suitable stores, a sound water-tight hive, adequate warm porous covering, ventilation, and on the part of the bees themselves vigorous constitutions; yet notwithstanding all these how often winter losses call forth our lamentations. This winter, so far as time would allow, I have given a little attention to the subject of shading of the entrance to hives, thinking that probably here was a fruitful source of bee mortality. On several occasions after a bright spell of sunshine, during which the bees have flown pretty freely, quite a number of apparently dead or dying bees were to be seen, either on the ground or the branches of surrounding shrubs, and even upon the hive itself. On one occasion an apparently lifeless bee was picked up, and taken indoors and held upon the palm of the writer's hand for a minute or so near the fire; at the end of that time on being taken to the door and liberated it flew straight back and into its hive. On a second occasion six bees were taken in like condition and placed in an empty match-box in a similar position, with the result that all were resuscitated, and returned to their hives. A third lot of twenty were next tried, and this time more than half on being liberated were able to fly off to their hives, the remainder being quite active and crawling nimbly about. This would seem to confirm the suspicion that quite a large number of bees are lost through these short winter flights, and points to the necessity of excluding direct light, particularly the sun's rays from the entrances to the hives. Especially is this the case when, in spite of a bright spell of sunshine, a cold wind is blowing. Undoubtedly occasional flights during suitable climatic conditions are both essential and good for the bees to enable them to get rid of their accumulated bowel residue, but if only the best food is given to the bees upon which to winter the fewer the flights consistent with the natural needs of the bees the better. More than this is detrimental. The bees after flying about settle on the hive or upon the ground or some object near, and becoming chilled and benumbed, are unable to return. Those which have been on the outside of the cluster, also others through age, more quickly fall victims. Absolute rest induced by thorough shading of entrances would save the lives of most of these, and the bee-keeper would be rewarded in the spring by his bees coming out of winter quarters in strong condition, and able with a little judicious stimulation to build up quickly and in time to take full advantage of the honey flow. In conclusion, I would warn any bee-keeper against standing his hives in the shade of a wall from which the sun and light is excluded. Such a position is damp and dangerous, and productive of even greater loss of bee life than unshaded entrances.—J. W. M., Withernsea.

PLATFORMS v. LEGS OR SINGLE STANDS.

[8346] Allow me to suggest to Mr. Herrod (see page 12) that if hives were placed on a sort of low platform made of, say, two pieces of quartering 3in. by 1½in., placed edgewise, and three pieces 3in. square and 18in. long nailed anglewise between them and laid on stumps or bricks, say a platform 15ft. long, 9in. clear above soil, that would give room for three or more hives and be an excellent help when manipulating. I use them, and when manipulating supers the platform forms a most convenient rest for super cases, and supers too. Once used, always used.—A. Harris, Wavendon.

[Some years ago I should have agreed with you, but experience has taught me that platforms are a nuisance; they are more costly, as there is a lot more wood used in them than in hive legs. Also, it necessitates keeping the bees in straight rows, which means if you wish to get to the front of the hive either hurdle jumping or a journey right round the end of the platform. Of necessity the hives are kept too close together, so that robbing is more likely to take place and swarming fever spread. The making of artificial

swarms, nuclei, queen rearing, and many other manipulations are only carried out at great inconvenience. The idea in a garden is to keep the hives as far apart as possible and afford shade, not to plant them like potatoes. This cannot be done with platforms. I have yet to see an apiary of any size in which platforms are used. All practical bee-keepers know the value of and use hives with legs.—W.H.]

THOUGHTS ON A PRESENT DISCONTENT.

[8247] It is clear that the large bee-keepers will not willingly submit to the compulsory inspection of their apiaries. That any Act without compulsory clauses would be unique and a farce is undeniable, and it is certain that a Bill containing such an exemption clause as Mr. Woodley suggests could not be passed.

There appear to be two alternatives, viz., limited powers of compulsory inspection, or what amounts in the end to the same thing, *liability* of all apiaries to compulsory inspection under certain conditions. In the case of other domesticated live stock, I think, we have first compulsory notification of diseases, followed by inspection and enforcement of the provisions of the Act as provided in such case.

I will give an instance of how this would work with bees: Some years ago I bought some (guaranteed healthy) stocks of bees from a man who at that time was a persistent advertiser in the bee papers. They had sour brood, and foul brood of old standing also. Now, under such an Act as suggested, I should have been compelled to notify, and compulsory powers of inspection, &c., would have been enforced against the seller.

Mr. Manley would say, "but perhaps the gentleman did not know disease when he saw it, and had he merely kept bees instead of dealing in them the disease would have remained undiscovered and yet have been a menace to the district." That may be so; still, I think that the ignorant and "pig-headed" bee-keeper is pretty well known to his neighbours, and compulsory powers might be enforced in all suspicious cases.

Addressing a company of bee-keepers, Mr. Herrod once said, "The big bee-keepers might be safely trusted to keep down disease in their own apiaries. Members of Associations might be left in the hands of their experts. The object of the proposed legislation was to enable them to get at the ignorant and wilful bee-keeper who was a constant danger to his neighbours, and who, not being a member of any association, was not otherwise approachable."

It would appear that what we really need is not compulsory inspection of all apiaries, but *liability* to compulsory inspection. If that be really the intention of the promoters of the Bill, and they can convince the big beemen that it would be worked as Mr. Herrod suggested, they would disarm their opponents.

Evidently Mr. Herrod does not agree with Mr. Manley that the extent of a man's apiary is no test of his ability to manage the same. I can't agree with Mr. Franklin in what he considers sufficient examination of large apiaries. If necessary at all, it should be done thoroughly. I should think an inspector would feel the anomalies of his position when inspecting the apiaries of, say, Mr. Herrod and Mr. Simmins.

Mr. Manley's suggestion that the possession of a certificate should render the holder exempt from compulsory inspection is better than he perhaps thinks, inasmuch as it would induce many more to qualify themselves, and the craft would benefit to that extent.

To my mind the launching of Mr. Tickner-Edwardes' rival scheme is disquieting. It cannot be accepted by bee-keepers, and it cannot be ignored. It can reduce the chances of any legislation at all, since, should the B.B.K.A. succeed in formulating a scheme acceptable to the majority of their following, what guarantee have we that the Bill would not be amended and finally become law in a shape much less acceptable?

I do not agree that the passing of inspectors from apiary to apiary would spread foul brood, as that disease has been well investigated, and its method of propagation is understood, but the "Isle of Wight" disease is on a different footing. Since it appears to be prevalent in countries other than our own it would be interesting to know if it is making headway where compulsory inspection is enforced.

I am sorry so much animosity is shown towards the skep. Strange that bees have survived so long in other than movable comb hives. Is it not rather unscrupulous commercialism that makes all not well with the industry to-day?—G. M., Northants.

Queries and Replies.

[8273] *Moving Bees, and other Queries.*—May I ask for your kind help and advice through the columns of the "B.B.J.," of which I am a regular reader? I was given a swarm of bees in July two years ago (from Parkstone, in Dorsetshire). I brought them over here, and they have

since done excellently, and so far have had no sign of the "Isle of Wight" disease, or any other. I united two of the three stocks I had at the end of last summer, and wintered down two stocks in good condition, each with a large quantity of stores. Next month (about the middle) I am leaving this place and am going to live in the South of England, where I hope to continue bee-keeping.—(1) Is it possible to move stocks at that time of year, and if so, what would be the best way to do it? (2) Would it be fair to take bees from a more or less infected area (even though they have always been perfectly healthy)? (3) If I do not move the bees, but sell them here, how much ought I to ask for a strong stock? (4) When I united the bees in the autumn I extracted the ten frames which I took from the discarded hive. As there was a good deal of heather honey in them they did not extract very clearly, and I have since kept them in an outhouse, in a disused hive, which I now find did not close down tightly. Would this be likely to have allowed wax moth to get in, and in any case, would the half-extracted combs be of any use to the bees in the spring; or, as the honey was all uncapped in the extracting, will it have fermented? With many apologies for asking so many questions.—A.S.N., Totland Bay, Isle of Wight.

Reply.—(1) Yes, it is quite possible; secure all the parts of the hive by means of screws. See the quilts are well secured by screwing a piece of wood on each of the four sides. Screw perforated zinc over the entrance, and they will travel quite safely. (2) We don't think you can do any harm. Your bees are healthy, and there have been cases of "Isle of Wight" in the neighbourhood to which you are going. (3) It is very difficult to say without an examination. Probably worth from 30s. to 50s. (4) An examination only will reveal whether wax moth is present, or if the honey has fermented. To be on the safe side it will be best to melt them down for wax.

[8274] *Race of Bees—Bees Building in Candy-Boxes.*—(1) Of what race or cross are the enclosed bees? They are rather bad-tempered and difficult to manage. (2) Are they a good and active breed to keep? (3) I have two hives which when shut up for the winter contained ten frames each, covered with bees, brood and honey. They were very strong, the queens are 1910 and 1911. In the second week in December a cake of candy was placed in each hive. On New Year's Day I went to renew the supply and discovered that the bees in each hive had filled the candy boxes with comb, and were busily building. The weather has been very warm and mild, although in the county of Durham. A third stock consisting of a swarm from one of the other two hives has been fed with candy since September, and has taken no liberties with the boxes. — M. P., Gainsford.

Reply.—(1) The bees sent are the ordinary black variety. (2) They are the best bees to keep if the strain is right. Viciousness can be bred out by selection. (3) They are evidently splendid stocks. Remove the candy boxes containing comb on a warm day, and replace with others full of candy. The stocks being so strong are evidently breeding, and care should be taken to see the food supply does not run short. The other hive not being so strong evidently has an abundant supply of food below, so at present do not require the candy or they would have taken it.

[8275] *Combs Built Behind Dummy.*—Can you advise me in your Queries and Replies what to do in the following case? By mistake I left the dummy board out of a hive last season, and on examining the latter I found that the bees had built three combs without frames, so that it can hardly be called a movable comb hive. The bees are wintering on four combs, one frame and their own three. I have to move them to another town not later than Easter, and I want to know, first, what is the best time for this; secondly, could I put them in a new hive, in which case would their old combs, honey and brood, if any, have to be wasted?—H. B., Stockport.

Reply.—You should move the bees as soon as possible just as they are. In the spring move the dummy back and insert a frame filled with a full sheet of foundation. Repeat the process when this is built out, and so on until the bees are covering about six combs built in the frames. See that the queen is on these combs, then insert the dummy between them and the combs attached to the hive, with a small piece of wood ⅜in. thick at bottom to block it up and allow free passage of bees underneath. Allow it to stay thus until all the brood is hatched out in the frameless combs, then cut them out and go on adding frames until the full complement of ten is reached.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

A New Bee Journal.— The *South African Bee Journal* is the latest addition to our Colonial list of papers dealing with bees and bee-keeping, and the association, under whose auspices it has been launched, is to be congratulated on the enterprising start. Vast possibilities lie ahead for the craft in this country, where Nature has done its utmost to

provide enormous ranges of bee forage. The task of organising the association has been a heavy one, and now that the conducting of a bee-paper has been added, the duties must be of an onerous nature. Bee-keepers in this country look on the future hopefully, and wish a very large measure of success to both ventures.

Excelsior!—In the United States the industry is carried on under the fostering care of the Government, which now votes a sum of £3,000 to carry on experimental apicultural work. This year they have granted an additional sum of $5,000 to Dr. Phillips' department, which proves that the marked devotion and eminent skill shown by himself and his staff of assistants is being duly appreciated. A perusal of a parcel of bulletins and reports kindly forwarded me shows that excellent work is being done all over the country by the Bureau. Indeed, several apicultural features have been dealt with in a manner so thorough and exhaustive that the results are worthy of all praise and admiration.

Standardising.—In America there is a tendency to work towards that desirable end—a standard frame, a blessing we in this country so highly appreciate. *Gleanings* says:—"There has been a marked tendency to favour the ten-frame hive more strongly than ever, and a corresponding inclination to drop all other styles of hives. In other words, the Langstroth frame is coming to be more and more the prevailing standard throughout the United States. When Langstroth settled on the dimensions of this hive, he builded better than he knew." It is worth noting that the depth of this frame in comb-surface is practically that of the British standard frame.

Honey.—"One good argument in favour of honey as a food is," says Louis Scholl, "that it goes further than other sweets. Many more pieces of bread can be spread from a pound of honey than from preserves, jelly, or syrup; so honey, apparently dearer at first, is cheaper in the long run. Another even more important item is the healthfulness of honey when compared with any other sweet." This last feature cannot be over-emphasised, and the purveyor of this luscious sweet has the consolation of knowing that he is dispensing not only the most delightful and appetising of Nature's gifts, but also the most health-giving. Bee-keepers are indeed benefactors to the human race. Long ago this was even better understood than it is now, and old writers were never tired of extolling the many virtues of honey and mead.

Queens in Embryo.—"The books" teach us that a larva, up to the time when it is three days old, produces an efficient queen. While the teaching is right, yet it has often been doubted if half this time might not be cut off with advantage to our future queen-mothers. Now "Doolittle" says: "No one should entertain the idea that a three-day-old larva is good enough for a queen. The best queen larvæ are those from twenty-four to thirty-six hours old, and these should be perfected into queens with a colony, which will give them the best care." Mr. Root agrees, and declares the teaching "is entirely orthodox and in line with our experience in the rearing of thousands of queens. We prefer not to have a larva older than thirty-six hours for grafting."

The Canadian B.J.—This journal is of late becoming more of a "living" concern. It is extending its list of contributors, and these are dealing more with practical subjects which must enlist the attention of both novice and veteran. What a glorious field it would have to work in if bee-keepers from Newfoundland to Vancouver would only subscribe and thus make it more and more an active force in apiculture. Mr. Byer deals interestingly with the subject of introducing queens, and I was pleased to note that he makes so strong a point of securing young, newhatched bees to care for the caged queens. Mr. Sladen, in illustrating his latest cage in *Gleanings*, advocates the same policy. They both believe in a push-in-the-comb-cage as the best for securing safe introduction of queens.

Amalgamation.—The *Bee Bulletin*, after 20½ years of an independent existence, has been taken over by the *Australian Bee-keeper*. Messrs. Pender's paper is thirteen years old. Recently it has been greatly improved, and promises to keep well up to date. They know how to do things on a large scale "down under," many apiarists possessing very large apiaries. A leading feature of the *Bee-keeper* is a symposium monthly on some leading feature in apiculture, for which the Editor offers prizes. "Handling Supers of Honey" has been dealt with interestingly in the latest issue to hand, but space does not allow extracts.

"The National."—This Association, like our own B.B.K.A., is eagerly in search of a new constitution. There is in both cases a desire to extend the activity of the central authority, to make both more of a living reality, and to bring them more into touch with the associated membership, not only in one or two centres, but also all over the country. Both associations are in great need of strengthening their stakes and widening their borders. Money in each case is a weak point, and the want of it curbs the energies of even the most enthusiastic.

The Americans are changing the membership fee from a dollar to a dollar and a half, but even then they will be handicapped. I have been wondering if our "reformers" have gone to sleep?

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

KINGSTON.—*Securing Surplus.*—We have frequently adopted the plan you describe to obtain show sections. For ordinary purposes it is not advisable to follow it.

M. W. C. (Sussex).—*Sugar for Syrup Food.*—Moist sugar should not be used for feeding bees. You had better use the sugar you have for domestic purposes.

R. G. H. (Worcester).—*Value of Old Bee-Books.*—No. 1 is worth 1s. 6d., No. 2 about 2s.

BOX HIVE.—*Moving Bees.*—It will be quite safe to move the bees as you suggest, if thin strips of wood are screwed horizontally across each side of the comb.

E. D. (Turriff).—*Adding Supers.*—Under ordinary circumstances no practical bee-keeper would put the empty rack on the top. Reasons for this are given in "Helpful Hints for Novices" in a previous number of "B.J."

H. C. (Old Charlton).—*Altering Positions of Stocks.*—The weather is now cold, so wait until the bees have been confined to the hive for a week. Then remove the stocks to the desired positions; they will locate the new position when taking their first flight afterwards.

R. H. (Rudyard).—*Painting Hives with Creosote.*—The smell would be very objectionable to the bees. The best material to use is good oil paint.

W. M. (Ayrs).—*Bees and Neighbours.*—We are afraid it is a little difficult to answer your query. It would be very unwise for you to enter into costly litigation. Why not see the lawyers and come to some agreement in the matter. We would also remind you that there is an Insurance Policy against damage to third parties issued by the British Bee-Keepers' Association at one penny per hive, with a minimum of ninepence, and if you are not a member of an Association affiliated to it, 1s. registration fee in addition. We could supply you with back numbers of "B.J." in which legal disputes regarding bees are reported, if this would be of any assistance to your solicitor.

J. A. S. (Cornwall).—*Patenting Bee Appliances.*—(1) Write for particulars to the Patent Office, London. (2) and (3) Any of the manufacturers of appliances who advertise in our papers would, no doubt, undertake the manufacture and sale of the appliance if it is of practical value.

W. R. T. (Pem.).—*Making Hives.*—Particulars of making a hive such as you require are given in a 1d. leaflet published at this office.

Honey Samples.

A. P. W. (Sussex).—A very good honey, mainly from clover; granulation might be smoother. The white appearance is only caused by the air bubbles which rise to the top, but it is no detriment. It can be removed before the honey granulates.

Suspected Disease.

A. O. G. (Sussex).—The bees were too decomposed for examination, so we cannot diagnose cause of their death.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

LIMNANTHES DOUGLASII, strong plants, 30 6d., 60 9d.; seeds, 3d. packet, two 5d.; also Chapman's Honey Plant, seeds 4d, two 6d., free. REV. ANDERSON, Northam, North Devon. r 71

WANTED, original negatives, suitable for making lantern slides, of Bee Life and Bee-keeping manipulations.—Particulars to BIGG-WITHER, Birdwood, Wells, Somerset. s 15

12 PURE WHITE WYANDOTTE PULLETS and COCKEREL, good strain, price £2 2s., f.o.r. and package free.—R. BROWN and SON Flora Apiaries, Somersham, Hunts. s 14

GOOD ENGLISH HONEY FOR SALE, in 28lb. tins; sample, 2d.—H. MATTHEWS, Wilden, Bedford. s 12

36 SCREW bottles good dark Honey, 21s.; 28lb. tin, medium ditto, 13s.—R. B. MANLEY, Potcote, Towcester. s 11

HONEY FOR SALE, 28lb. tins, 14s. 6d.; ½cwt., 40s.; guaranteed pure, f.o.r.—CORBETT, Hurstbourne Tarrant, Andover.

NEW W.B.C. HIVES; two ¼ plate cameras; two silver watches; telescope; exchange for extractor, white Wyandotte pullets, eggs for sitting, or honey.—BOWDEN, Broomhill, Witley, Surrey. s 9

2 DOZEN glazed Sections, five dozen jars, 9s. per dozen, packed on rail.—STUBBS, Rempstone, Loughborough. s 8

3 DOZEN well filled Sections, 7s. 6d. dozen; 28lb. tins extracted Honey, 14s. 6d., or 56s. cwt.—MILLIS, Hill's-lane, Ely, Cambs. s 7

Editorial, Notices, &c.

OBITUARY.

MR. JAMES HEDDON.

We regret to have to record the death of Mr. James Heddon, at his residence in Dowagiac, Michigan, who was at one time a very prominent bee-keeper.

The late James Heddon was born on August 28th, 1845, in Genesee Valley, New York. While quite young he removed to Dowagiac, where he spent the remainder of his life and carried on his business as a bee-keeper. He commenced bee-keeping in 1869 and served his apprenticeship to the business with Mr. Hastings, whose daughter he married. Mr. Heddon was one of the first to make a speciality of bee-keeping, and showed that a living could be made by it, for not only did he commence with nothing, but credited his capital amounting to thousands of dollars as entirely due to bees. He had kept as many as 600 colonies in his apiaries, and in 1879 he commenced dealing in hives and appliances. He was the inventor of the "Heddon" hive, which had the brood-chamber divided into two sections, with the object of making manipulation by hives instead of frames. In 1885 he published "Success in Bee Culture," which was from first to last a practical work, and in which he described his hive and method of working it. He was also the inventor of the Heddon surplus case and the slatted honey board, at one time extensively used.

In 1887 we paid Mr. Heddon a visit and found him a very pleasant gentleman, extremely nervous in temperament, constantly on the move as though he were hung on springs, very excitable and most quick to seize an idea and appreciate the experience of others. He showed us his apiaries, and, although he was at the time subject to a bee disease, he insisted on manipulating the hives himself, and as a consequence suffered considerably all the evening. In the Heddon hive the frames do not hang on rebates or runners, but are kept together by means of thumb-screws, and unless they are very securely fixed and the screws thoroughly tightened, there is danger of the frames falling out when the hive is lifted. This is just what happened when Mr. Heddon wished to show how easy it was to manipulate these shallow bodies, and to shake the bees out of them. He lifted one of the bodies, and in giving it a sudden jerk down, all the frames, together with the bees, tumbled out, and of course showed us one of the disadvantages of manipulating hives instead of frames. He told us that he had difficulty in getting his bees through the winter, and had lost as many as 40 to 50 per cent. in wintering. The disease which affected him was a sort of catarrh, and he told us that about ten years previously he began to notice an itching sensation in the ears, which at first would appear occasionally, but gradually extended to the mouth. The sensations became more severe and then the eyelids swelled, after first itching and burning. He found that to open a hive and breathe the odour of the bees brought on the irritation at once. He was consequently obliged to keep away from the bees and have the work done with hired help. So sensitive was he that on one occasion when he was quite well, not having been near the bees for some time, a bee flew past his face, within a few inches of it, and half an hour afterwards he was seized with one of the most severe paroxysms he had experienced. For more than eight hours he could not speak aloud. All, however, passed off, and by keeping away from the poison he was able to keep well. When we knew and saw how he suffered we felt flattered that Mr. Heddon should have personally conducted us over his apiaries, and deeply regretted that our presence and his courtesy should have been the cause of his suffering so much during the rest of the evening.

Mr. Heddon was a prolific writer to the bee papers, and entered into discussions sometimes with a fierceness which could only be accounted for by the state of his health. He also took an interest in local affairs and was editor of the *Dowagiac Times*. For the last fifteen years very little has been heard of him, as he seems to have dropped controversy, and is therefore not known to the younger generation of bee-keepers. Those, however, who may remember his writings in the latter part of last century will realise that he was one who played an important part in the progress of the industry and to whom bee-keepers owe a debt of gratitude for much practical information.

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

How to recognise a ripe Queen-cell.—M. Bourgeois says in the *Apiculteur* that before introducing a queen-cell into a colony it is advisable to ascertain its state of maturity and vitality. The point of a ripe queen-cell is leather-coloured, and thinned down so that it is very transparent. If held up towards the light of the sun, the queen will be seen moving, and all her movements are very clearly distinguished. If the queen-cell is held up to the ear, her gnawing the cell-covering will be distinctly heard. The close contact of bees with the royal

cell has an important effect on the quality of the future queen, so that if a queen-cell has to be caged, it should be done as near to its maturity as possible. A young queen requires attention and food on her emergence, and could only live for a very short time isolated, otherwise her prolificness suffers.

A Strange Bee Journal Editor.—We read in the *Hamburger Nachrichten* that the Court of Justice in Hamburg has fined a manufacturer of fruit-sugar named Frohloff, £60, with the alternative of 100 days' imprisonment, for violating the ordinance respecting the adulteration of food. This unscrupulous merchant was selling a mixture of foreign honey and sugar-syrup under the name of "Baldivia Honey." There is nothing very astonishing in this, for the German Courts have to condemn similar cases nearly every week. What specially interests bee-keepers is the fact that the trial has shown that M. Kuchenmüller, the editor of the *Constance Bee Journal*, received 10,000 marks (£490) to support in his paper this illicit trade of Frohloff's, who had subpœnaed his friend as a witness for the defence, but whose oath the Court refused to accept. Curious way this for an editor to study the interests of his subscribers.

Conifer Honey in 1911.—M. J. Dennler, writing in the *Elsass-Lothringischer Bienen Züchter*, says: Rarely have we had so continuously a high temperature as during last summer. The flower-honey harvest, with the exception of second cut red clover, suffered somewhat in the plains of Alsace, but, on the other hand, conifer-honey was extraordinarily abundant. Pastoral bee-keeping profited by it, and from all the valleys a large number of colonies were transported to the pine forests of the Vosges Mountains. On extremely hot days, even when the thermometer reached from 77deg. to 86deg. Fahr. in the shade, bees were busy collecting this dark forest honey, and supers had to be removed every eight to ten days, and yielded an average of fifty kilos (110lb.) per hive, without counting the rich provision of stores in the body boxes.

M. Dennler says care should, however, be taken not to depend upon this honey for wintering bees, as experience has shown it to be harmful to them if they are long confined to their hives. The danger consists in the small quantity of water which this honey contains, and this applies with greater force to that gathered in 1911, which is extremely thick, and has a tendency to solidify in the combs. He advises bee-keepers, who have not replaced part of the combs containing conifer-honey with those containing sugar-syrup, to supply the bees with water in bottle-feeders. Also to prevent too early brood rearing, as this honey is more stimulating, he advises that hives should not be kept too warmly covered, and the bees not disturbed. With these precautions the dangers of wintering on conifer-honey are minimised.

AMONG THE BEES.

BEES IN BOOKS.

By D. M. Macdonald, Banff.

When reading books I am always interested in any reference to bees. These are frequently the fruits of close observation, but as often the contrary. At times they reveal a wealth of simile derived from the bee, its products, and its industry, which is worthy of our admiration, but often the lack of knowledge of the bee and its ways is painfully apparent. My quotations on this occasion will be taken from such diverse authorities as Dr. Johnson, Sir Walter Scott, a leading lady novelist, and a male novel-writer.

I have a profound admiration for the learned lexicographer, Dr. Johnson, but my extract will show that his knowledge of bees was not extensive, and his acquaintance with cattle as limited. In his "Journey to the Western Islands, 1773," he says: "Of their black cattle, some are without horns, called by the Scots 'humble' cows, as we call a bee a humble bee that wants its sting." A strange jumble of "facts" for so learned a man! Of his dietary during his journey he records the following: "The tea and coffee are accompanied not only with butter, but with conserves, marmalade, *and honey.*" Till reading this I was under the impression that bees, or their produce, were known little, if at all, in our Western Isles. Some Hebridean apiarian might inform us what degree of success attends the pursuit in these wind-swept islands, apart from Stornoway.

In the "Pirate" Sir Walter Scott gives a humorous account of their introduction to the Northern Isles, by Mr. Yellowley, factor, residing near Kirkwall. He had an orchard there, and had "imported nine skeps for the improvement of the country and for the turning of the heather bloom into wax and honey." "And they thrive, I hope?" said Cleveland. "They thrive like everything else in this country, and that is the backward way," was the reply. "Want of care, I suppose?" said Cleveland. "The contrary," replied the factor, "they died of ower muckle care." The "chiel" who had been employed as the temporary bee master indeed had killed them with misplaced kindness, and evidently hugged to his soul the flattering unction that he had done a kind and wise thing. "'Had there

been onybody in charge but myself,' he said, 'ye might hae seen the skeps, or whatever ye ca' them; but there wad hae been as mony solan geese as flees in them, if it hadna been for me. I watched them so closely that I saw them a' creeping out at the little holes one sunny morning, an' if I hadna stopped the leak on the instant with a bit of clay, the diel a bee, or flee, or whatever they are, would have been left in the skeps, as ye ca' them!' In a word, he had clogged up the hives, and my bees were as dead as if they had been smoked—and so ends my hope *generandi gloria mellis*, as Virgil hath it."

"Ouida's" references are short and sweet. Her characters are mainly ignorant French peasants, but evidently many of them kept bees. "They sent their apples, and poultry, and honey to the great cities." "One woman was selling honey-comb and pots of honey at a bench in the market"; another "never owned golden pieces until her bees had sucked the heather bells," and a young girl "stands alone in the fields amid the honey smell of the clover." Even the good bishop is represented as "tending his garden, and garnering his own honey." A château, once the abode of the noble, is now let out to the poor, "each family in their chamber, like a bee in its cell." "The bees hummed round their houses of straw," and "all about was the drowsy hot weather and the murmur of the bee." "The golden-girdled wasp and the velvet-coated bee, with its pleasant harvest song," was everywhere. We have "a belt of lilac clover, over which a swarm of bees was murmuring." "The honey-weighted heather bloom" is praised, and "the steep slopes of the hills were swept only by the plover and the bee." We have glimpses of other flowers visited: "The wild thyme which fed the bee" and "every blossom of wild thyme growing purple was sucked by the bees." "An immense gladiolus, all scarlet and gold, with bees sucking into its bells." "Their bees seek the orchis bloom, and the lime tree honey." A solitary, like the Baptist of old, "finds the honey of the wild bee sufficient to feed him." We are told that the "universal soul hums in every song of the bee." As we might expect, however, from this writer, there is now and again a jarring note, "Will the nightshade give out sweetness and honey?" we are asked, and a young maiden "would as soon have asked honey from a lot of snakes" as love from her fellows.

The male novelist portrays a Reverend Father in France, deep in the plots following the '45. Steeped in intrigue as he was, we have a few tender touches redeeming his character. Beneath the hard crust we see glimpses of his better nature. When in prison he remembers that at Dixmunde "he had a garden gay with all manner of flowers, and bee-hives." When miraculously escaping from prison, by climbing along the roofs, even at the most critical moment his companion hears him mutter as in a dream, "A garden and six bee-hives. No, I faith, it was seven last summer." When in exile he laments: "My hive bees will hum next summer among another's flowers." Amongst his last words uttered on earth were: "Oh the sweet world, and the sunny garden, and *the bees*, and the children!" He described himself in brief, "Parish Priest of Dixmunde, working two gardens, human and divine, understanding best the human where the bees roved." There is a touch of Maeterlinck, I think, in these brief quotations. "To the man who has once learned to love them, a summer without bees is like one without birds and flowers!" is a sentiment to which many a bee-keeping heart will respond.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES ON MY OBSERVATORY HIVE.

[8348] My hive is a six-frame Lee's Observatory, with a shallow frame in the centre, and sections in pairs on either side above. On the morning of 2nd June, a bumble bee forced its way in, and got as far as a centre comb in spite of the bees, but there they killed her. For half an hour she could hardly be seen for the bees crowded round her, but by degrees they dispersed to their work, leaving some five or six pulling at her legs and wings. These few bees could not move her as she appeared to be jammed between the comb and the glass, so they proceeded to shave the corpse, and by 10 a.m. next morning there was not a hair left; the thorax, abdomen and legs smooth and shining like a black-beetle. Then some dozen bees came to the barbers' assistance, and they dragged the body away without much effort.

In July queen-cells were commenced, two on the edge of the centre frame of brood-nest, and three others on the shallow frame above, which had partly broken down through the heat. One of these cells was almost completely hidden in a fold of the broken comb. On the 14th the

bees swarmed, but the queen refused to budge, and they were all soon back again. On the 16th there was a change in the weather, which turned much colder, and the bees tore up all the queen-cells except the one so well hidden. Is not this rather unusual? Why did they not make a clean sweep of them all?

On the 18th they swarmed again, this time the old queen accompanying them. The swarm was quite a good one, and safely taken. This left one sealed queen-cell in the hive, but on the 21st some of the bees seem to have got into a panic, for they began converting a *drone-cell* into a queen-cell. Why? I can only suggest that they had no knowledge of the hidden queen-cell. However, this cell was never sealed as far as I could see. On the 29th it and the true queen-cell were both being torn up, so I concluded the young queen had duly hatched, though as the hive was crowded I had not seen her. On the 2nd Aug. I saw cells being polished and cleaned, and on the 7th discovered her majesty busy laying.

The next interesting event was the very cool, quiet, and methodical way the drones were expelled. On the 3rd Sept. I noticed the drones were being hustled, so sat down with my pipe to watch. Apparently so many workers had been "sworn in as special constables," for the others took not the slightest notice of anything but their own job. Instead of working in twos or threes, each "special" tackled a drone single-handed. When she found one she invariably got a grip on his back, and began gnawing at the base of the wing close to the thorax. The attacked drone rushed about all over the hive trying to get free. Occasionally he managed to do so, in which case he was left in peace, until he ran into another "special," in which case he was promptly tackled again. By degrees the drones were hustled to the passage; when fairly in the passage the constable generally let go, but marched behind, and if he stopped or hesitated she gave him a push saying "move on" most plainly; if he turned round she was on to him at once. Each constable stuck to her own particular prisoner till she had got him outside, taking no notice of other bees or even drones that she met. By evening about three-fourths of the undesirables had been expelled, and the passage was full of the "specials" guarding the outer entrance.

On searching for the remainder of the drones I found them herded in small groups in odd corners. The next day the same performance was repeated, only three drones being left by evening, and they disappeared the third morning. In no single instance did I see two "specials" tackle a drone at the same time within the hive, but when they had all collected at the outer entrance towards evening, two or three would rush at any poor wretch trying to re-enter. It was a most methodical and effective use of extra police, and the desired end was gained with the minimum disturbance of the routine of the hive. I fancy they are not always so quiet over the job, and that one worker to one drone is not the usual odds the drones have to contend with. The old queen, before swarming, was laying in all three frames on one side, the shallow frame on top centre, and the top frame on the other side. This is also, I believe, unusual in an observatory hive, but is probably accounted for by the abnormally long hot summer.—F. SITWELL.

PARTHENOGENESIS.

[8349] In connection with this subject it may be of interest to enquire what share each ancestor takes in contributing to the bee's inheritance, assuming Galton's law of ancestral inheritance to hold good for bees. This law states that, on an average, the parents contribute one-half, the grandparents one-quarter, the great grandparents one-eighth, and so on, to their descendant's total inheritance. The "nth" generation, therefore, is responsible for $\frac{1}{2^n}$ of the inheritance; and each member of this generation is on an average responsible for $\frac{1}{2^{2n}}$, as there are two of them.

Let us now consider the case of the bee. As every drone's mother contributes one-half of his inheritance on her own account, being his only ancestor of the first generation, we find that the male and female ancestors are responsible respectively for the following fractions of their descendant's inheritance.

QUEEN OR WORKER.

	1st	2nd	3rd	4th	5th
Queen ancestors contribute	$\frac{1}{4}$	$\frac{2}{16}$	$\frac{3}{64}$	$\frac{11}{256}$	$\frac{21}{1024}$
Drone ancestors contribute	$\frac{1}{4}$	$\frac{1}{16}$	$\frac{3}{64}$	$\frac{5}{256}$	$\frac{11}{1024}$
Contribution of each generation	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$

DRONE.

Queen ancestors contribute	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{3}{32}$	$\frac{5}{128}$	$\frac{11}{512}$
Drone ancestors contribute	0	$\frac{1}{8}$	$\frac{1}{32}$	$\frac{3}{128}$	$\frac{5}{512}$
Contribution of each generation	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$

From these we can find the average contribution of an individual ancestor of any generation by dividing by the number of ancestors (male or female, as the case may be) in that generation. (I may remark that the numbers 1, 1, 3, 5, 11, &c., are formed by adding the last to twice the one before it; thus, the next number, $21 = 11 + 10$.)

From these tables we can prove that:—

(1) On the average, an individual female ancestor contributes a larger fraction of her descendant's inheritance than a male ancestor of the same generation. This can easily be verified for the third or fourth generation; and may be proved to be true for any generation whatever (excepting, of course, the first generation in the case of a queen or worker, and the first and second in the case of a drone).

(2) As the bee has fewer ancestors than the ordinary animal, each individual ancestor is responsible for a larger share of the inheritance, although each generation contributes the same amount as in the ordinary case.

(3) Taking all the bee's ancestors into account, we find that a worker or queen owes three-fifths of her inherited qualities to her female ancestors, and two-fifths to her male ancestors. For the drone, these figures are four-fifths and one-fifth respectively.

(4) It may be remarked that if we consider an indefinitely large number of generations, the number of a bee's (whether queen, worker, or drone) female ancestors is to the number of its male ancestors as 1.618 to 1, nearly.

It seems that these results, should they be correct, are encouraging to the practical man, as they tend to show that the quality of the queens bred from (which we can control) is more important than the quality of the drones (which is so often an unknown quantity).—ANNIE D. BETTS.

AN INTERESTING INCIDENT.

[8350] It may be of interest to put on record the following occurrence, which I witnessed last summer and which seems to me to be very unusual, if not unique. It was a fight in which the victor was worsted in the act of victory. Several bees caught hold of a wasp, which, however, was making good its escape, when I intervened by placing a small twig in the wasp's abdomen, thus preventing it from stinging its adversary. A bee, evidently with a will, was thrusting its sting over and over again against the thorax and eyes of the wasp, but the sting simply glided over the chitinous covering, being unable to penetrate it. At last it went into the wasp's mouth, which at once closed so firmly upon it that the bee, in dismay, pulled off, leaving the sting and the usual appendage with the wasp. The wasp apparently did not relish the taste of formic acid, for, immediately the bee had gone, it opened its jaws very wide and allowed the gruesome morsel to drop. Every bee-keeper has seen how the bees, when attacking a robber, instead of seizing it in front, almost invariably begin by making ludicrous efforts to get hold of the sting, as if they wished to deprive it at first of that terrible weapon. The clever feat accomplished by the wasp explains to some extent the intention of the bees in what would seem otherwise a perfectly useless menage. I doubt, indeed, whether the bees ever succeed in their attempt to seize hold of the sting, since the robber, under such circumstances, invariably curls its abdomen, and is very careful not to draw the sting at that moment. The interesting incident which has prompted me to pen these few lines is not likely to occur again, for it was brought about by the fact that I was holding the wasp with a twig, thus rendering any other defence impossible. Under natural conditions the wasp would use its sting or flee.—ANTHEDON, Buckfast Abbey.

CARE OF BEES AND "ISLE OF WIGHT DISEASE."

[8351] On taking up the "B.B.J." for last week I was very much interested in the letters from correspondents on page 24 (8336 and 8337), and if space can be spared in our little journal I think more light can be thrown on the present bee troubles. With regard to Mr. Chapman's letter, I am of the same opinion as he is with regard to the straw skep. If these are abolished it will be the means of closing the door to many skeppists bee-keepers in this part of the country. I am well acquainted with all the bee-keepers for miles around here; I have talked the matter over with most of them, and when I go my rounds I usually take a few old copies of the "B.B.J." along with me, and mark with red ink the part I want them to give special attention to. Their answer with regard to the abolition of the skep is, "I shall give up bee-keeping."

Now, your correspondent (8336) on the same page touches a point that brings my views more clearly to my mind than ever respecting "Isle of Wight" and other diseases amongst bees. Now, I am an old bee-keeper and can go back some forty years to make my case clear; my past experience teaches me that in many cases bees are too much cared for and too much covered up; this causes too much artificial heat at the time when it is not required. Now, my father was an old skeppist, and I well remember going with him to the house of a gentleman where there was a stock in an old piano case under some trees, where no sun could shine on them until late afternoon, yet the bees had evidently been there for years, as the combs were very black. The nest was located in one corner and the entrances

were many, practically all over the case, but the bees were dry and healthy. My father drove them out with burning brimstone and had the honey and combs for his trouble. In another instance I by chance called at a farmhouse and the bees were swarming, so being interested, I went into the garden to see the apiary and found five old stocks, three of them being located in round plum-hampers, with only an old tillage-bag over them; they had been put into these make-shift hives the year previous, and it was one of these which was swarming. In another case I was sent for to get some bees out of the roof of a house in which they had been located for years. They were in the north side, overlooking a back yard, not a glimpse of sun had ever shone on them, they were immediately under the tiles and had no other protection, but the nest was dry and clean. During one winter at a farmhouse where I was working, I saw a box on an old chair under some trees in the back garden, and on examining it found an ordinary tea box, with ice on it as thick as a penny, and to my surprise it was tenanted by a swarm of bees, which had no protection whatever. Another instance was at a public house at which I called; knowing that I was a bee-keeper the landlord said to me, "Come and look at my bees." I followed him (wondering where he was taking me to) up some steps into a big hayloft, and there the bees were, the combs hanging partly to the roof-tiles and partly to the end wall with nothing but an old bag hung to one of the rafters in the roof to keep the dust from them, and he said that he made chaff every day for his horse and the bees took no heed of him. It was early spring when I saw them, they had wintered well, and he got two good swarms from them, and from these bees he became a large bee-keeper. Now, when I think of my past experience with bees and the present, I have come to the conclusion that bees at this age are too much cared for. If the hive has a good dry roof, and the bees plenty of stores, no cold will hurt them; the bees have an instinct to provide against all cold. I have talked this matter over with several of our largest bee-keepers here, and about the "Isle of Wight" pest. I have come to the conclusion that bees do not get plenty of fresh air at this time of the year. My bees have good dry roofs, very little covering on top of the frame, the entrance wide open, and, I am pleased to say, that our district so far as I know is free from any disease. Perhaps some other bee-keeper can throw light on this matter, which is important to all who have the welfare of their bees at heart, and I shall be glad if my communication brings forward the opinions of other readers.—E. T., Gowdall, Yorks.

"ISLE OF WIGHT" DISEASE.

A SUGGESTION.

[8352] The information recently appearing in the "B. B. J." on the "Isle of Wight" bee disease is very instructive, but rather disappointing. Our thanks are due to those who have already given us their experience, and if other bee-keepers so unfortunate as to have had an outbreak among their bees, especially those who have used remedies, will also give us the results, it will be a great help to the whole of the bee-keeping fraternity, and I feel sure that our Editors will be pleased to allow the necessary space.

It appears that this dread scourge has now spread over the whole length of Great Britain, and in most cases I am convinced the outbreaks could be traced to traffic in bees. I know several cases myself where the disease has appeared several months after the purchase. I would like to suggest to those who sell bees that if after selling they find this disease makes its appearance in or near their apiary, they immediately notify their customers of this fact and warn them to be on their guard and watch for any signs that may appear, thereby stamping it out as soon as it shows itself. There can be no harm done in this way, and if it does not appear, so much the better. As for myself, I should appreciate such advice as invaluable. I know several cases this autumn where apiaries were destroyed simply because the bee-keeper did not suspect anything wrong, especially at this time of the year. —J. Price, Staffs.

NOTES ON CURRENT TOPICS.

[8353] I would like to make some notes *en passant* on reading last week's Journal.

First of all I would say that I consider such articles as that of J. Dalzell most likely to be helpful to bee-keepers, since they take up one subject, lay the pros and cons before us, and leave us to form our own "delusions." This, in spite of the fact that I think "D. M. M." is in the right and your correspondent in error.

His initial error (in fact it is the base from which he erects his whole essay) is in concluding that "propolising" is the same as "hermetically sealing." I am certain that "propolis" is as porous—*i.e.*, admits of the interchange of gases—as a bag of sawdust or chaff. Moreover, bees have not "for thousands of years been accustomed in their wild state to have a covering *absolutely impervious*." The covering ground in burrowing bees is not impervious; in fact, I can think of no "wild" conditions under which an "absolutely impervious" covering is probable. I can readily see all the advantages he speaks of, and admit them, but these are

advantages to us, not to the bees. There are also the drawbacks, beside those pointed out by the Editor, of "weight" and expense, on a minimum 1s. per hive. That would mean about £5 in my small place.

With regard to heather honey as winter food for bees (8342), as one of the most extensive Scotch bee-keepers I would like to express my opinion, which is very emphatic, so far as I am concerned, that no winter food could well be worse than heather honey. I am not alone in the opinion (this is a purely heather district) that rather than "winter" on heather honey it is better to kill off and buy in new swarms from England in June next.

In re 8343, will J. M. Ellis be good enough to give us his actual experience and working with "Heathfield" remedies?

of the River Tone, two miles east of Taunton. I removed from Cheddon about three months ago and brought my bees here. Last February I destroyed one hive in which disease was suspected, as advised by the Senior Editor, and made two artificial swarms in May. I took over 5cwt. of honey and sold nearly all the lot to local customers at 8d. per pound extracted (customers find their own bottles), and 9d. per section unglazed. My wife took second prize for beeswax at Taunton Flower Show. I have kept bees for eighteen years and 1911 was the best season I ever had. We are quite proud of ourselves and the bees.

I am afraid we are now going to "keep bees under difficulties," as our garden is liable to be flooded. There was nearly 2ft. of water under the stands last Friday, but they can stand another foot without

MR. T. ICINGBELL'S APIARY, BATHPOOL, NEAR TAUNTON.

In re 8345, it is well to have these little experiments, as showing and emphasising the truth "that it will pay many of us to look well after our winter entrances." A winter entrance safe from "snow glare" should be an integral part of every hive, *i.e.*, part of its design.—T. D. N., Lanark.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

The hives in Mr. T. Icingbell's little apiary present a somewhat unusual aspect, being placed on high stands. This is explained in the notes sent to accompany the picture, by the fact that the garden is frequently flooded and the bees must be placed in a position sufficiently elevated to keep them beyond the reach of the water. We are glad to hear that Mr. Icingbell had a successful season in 1911. Writing of his experiences he says:—"My apiary is situated on the banks injury. The figure in the picture is that of my wife who has proved to be a great help at extracting time, and is a good saleswoman. Wishing all readers of the BEE JOURNAL a successful season."

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Missing Ancestry (p. 6).—As pointed out by "A. B. H." (p. 14), there is a considerable error in the number of ancestors at the twentieth step. But the error, great as it seems, has, like many other great things, probably sprung from a small cause. An error of two at the ninth step would account for it. Perhaps one of the queens in the seventh mated twice, giving an extra ancestor to the eighth! It is easy to check this progression, or even to project the result to any desired step by a simple process of compounding earlier steps. If the step indicators be added together, and the step totals be multiplied,

the respective results will give step and total. Thus, steps 2 and 3 give totals of 4 and 8, respectively. Add 2 and 3, multiply 4 and 8, and we get at step 5, a total of 32. Again $10+10$. and 1024×1024, give at the 20th step 1,048,576, the total in question. What an amazing difference is made by the missing ancestors. If there be anything in the call of the blood, there can be little wonder that the workers are such militant suffragettes. or that the poor fatherless drones have so little fight in them.

Pollen in Sections (p. 14).—It is quite likely that mismanagement on my part contributed to the pollen trouble. I indicated as much in my note (p. 10). At the same time, others suffered last season in the same way, and district may have had some bearing on the phenomenon. Brood-nests became somewhat clogged with honey, whilst pollen came in freely. I let my bees alone a good deal, and have no doubt that more energy would have produced better results. But I should like to guard automatically against a recurrence, and drone base would appear to be an effective means. Sections built upon this might not "show" so well, but they would possess merits of quality. Perhaps someone who has tried both extensively would give us the benefit of their experience from the salesman's point of view. The manipulation here practised by Mr. Harris seems sound, but I doubt whether a queen would always desert the upper half of the brood-nest, when divided by a rack of sections. Something would depend upon the amount of brood perhaps, and the strength of the stock. Again, the style of section and divider might occasionally obstruct the free passage of her majesty.

Candied Honey (p. 19).—I am grateful to No. 8270, whomsoever he may be, for pointing out the slip (page 9). "Dextrose" and "levulose" should clearly change places in my notes. This is the result of hasty writing without references to authority to refresh memory. I fear that "Cappings" are often written in haste, and repented of at leisure. Thank you, No. 8270; kindly pillory any similar errors, and I will try to be more careful in future.

Motto for Bee-Keepers (p. 23).—Is there any reason why bee-keepers should monopolise the stimulus of a New Year's tag? Why not share cordially with the bees? To carry out the idea practically, I have had a frying-pan (used for the purpose of tanging) carefuly etched so as to leave the following verse in raised letters. I intend to roll the letters with honey from time to time:

> Look forward and not back;
> Look out if you would see;
> Keep your eyes on the track,
> And don't look at me.

This ought to reduce the number of stings if they see it, and bees are quick-sighted. No doubt the smoke makes their eyes run. And for fear they should misunderstand, I have added the qualification, that it is written entirely

> In mot(to)ley guise, but ye are wise,
> And ye know what the motto's worth.

Management of Skeps (p. 24).—Mr. Bowen refers to the giving of extra room by placing an empty skep below. With flat-topped skeps (by far the best kind) this operation is admirable, and superior to the use of an eke. The skeps are easily separated, and may be split into two stocks sometimes if the skeppist really knows his business; or the upper one may be treated as a super in favourable years, ensuring a renewal of the combs. The "take" is not of the best, and would be improved by placing the new skep above after the bees have taken possession. But ekes are not satisfactory, I think, and those who have had experience of bee-driving may agree with me. The resulting hive is an unwieldy affair, from which bees and combs are less easily removed. I note that Mr. Bowen preferentially recommends a frame hive for the purpose. Here I am unable to entirely agree with him.

A Plea for the Skeppist (p. 24).—There are many of these primitive bee-keepers who are quite unable to keep bees on modern lines. Of course this should not be so, but I am convinced it is the case. In some cases they may be afraid of the bees, and keep them so because their fathers did. Or they may be temperamentally unqualified, or they may be, as many of them are, too poor or too ignorant to keep bees as they should be kept. Yet, in spite of all this, they can and do keep bees fairly successfully in skeps. Manipulation is of the simplest, and outlay is trifling, whilst returns probably approach those of frame hives in their hands. They sell bees at a clear profit of perhaps 6s. or 7s., either as swarms or established stocks; whilst, after allowing for the cost of appliances and foundation, and not considering the extra labour involved, it is doubtful whether they would do much better with the modern hive. They sometimes obtain nice sections above, and even have a sale for the pressed honey. A large trade is done in driven bees, which is helpful to the modern bee-keeper. Such driven bees occasionally bring a trifle, and stocks wintered with any reasonable care usually come through all right, particularly if the bee-driver has done his duty by the skeppist. Less feeding appears to be required, whilst swarms are generally early, though not large. As, however, local people buy swarms on the same intelligent principle which they apply to eggs, this does not greatly matter!

Skeppists and Legislation (p. 24).—There appears to be some fear lest the legislative proposals should hamper the skeppist or abolish the skep. Perhaps I may be allowed to state here that the Diseases of Bees Legislation Committee is overwhelmingly against such legislation. They appreciate the position of the skeppist, and agree that he should not be legislated out of existence. May I venture to hope, in view of this definite assurance, that bee-keepers will consider seriously before supporting any proposal to deal drastically with the skeppist, who pursues his vocation on such humble lines, but who is not, in my own opinion, inimical to the interests of the craft. As to disease, it is not proven that it is more prevalent in skeps than in frame hives, whilst a competent inspector can surely deal with it without difficulty. I may say that I held different views at one time, but I believe my present opinion to be based on a wider experience.

Queries and Replies.

[8276] *Erroneous Teaching.*—As a practical bee-keeper, and a subscriber to the BRITISH BEE JOURNAL for many years, I was surprised to read in the enclosed article by the Rev. Theodore Wood, that "working bees are divided into two classes, large and small, and that the large workers can make wax, though they cannot use it, while the small workers can use it though they cannot make it." The author of this article was lecturing a few days ago, and after the lecture I questioned him on the subject. He then assured me it was perfectly correct, and if I examined my bees more closely I should see the two classes of workers quite distinctly. I informed him it was strange that I had never read of this in any standard work on bees, and although I had kept stocks for years this remarkable fact had escaped my notice. He still maintained this was perfectly correct, and further surprised me by suggesting that the "large workers might be undeveloped drones."

I shall be glad if you will give me an assurance through your admirable little paper that the Rev. gentleman is wrong, and, if not, what I am to look for to distinguish the two classes of workers which this eminent naturalist maintains are to be found in every stock.—T. B., Acton Hill.

REPLY.—We have on several occasions had our attention drawn to similar articles, and equally erroneous statements. Those who know anything about bees will be quite aware that there are not two classes of workers "large and small" in a hive, who divide the work of wax-making and using, and that this statement is simply a flight of the imagination. That it should be supposed that "large workers might be undeveloped drones" shows the author to be unacquainted with the physiology of the bee. There are several other inconsistencies in the article. For instance, Mr. Wood says the bee "transforms one of the front legs into a tiny pair of pincers, by folding down the foot upon the middle part of the limb." This is quite wrong, so is also the statement that "it balances the cake upon its coiled tongue, and proceeds to nibble it into minute pieces which fall into a kind of basket formed by the projecting hairs on the lower surface of the head." We have watched a good many bees, but have never seen such a proceeding. He also says respecting the angles of the cells, "these angles never vary. In every cell in every comb in every bee-hive throughout the world they are the same." It is a pity the author did not consult "The Honey Bee," by T. W. Cowan, instead of repeating such long-exploded fables, for he would have found how difficult it is for bees to make ideal hexagonal cells, however much they may endeavour to do so, and the great extent to which the angles vary.

[8277] *Preventing Propolisation of Excluder.*—An answer to the following questions through the BRITISH BEE JOURNAL would be greatly appreciated:—(1) I have never used a queen-excluder between brood-chamber and section racks, but having a good number of sections spoiled last year, I have made up my mind to use "Wilkes's" queen-excluders. One difficulty presents itself to me, in regard to removing the racks when full. I use a Porter bee escape, and when lifting off the rack to get the escape underneath it is sometimes so firmly sealed down that I have to give it a good twist to loosen it in order to liberate it. Now, would this twisting alter the slots in excluder, or if excluder stuck to the bottom of rack, this also would be a nuisance. (2) I have a good number of frames partly full of honey and pollen. How could I get pollen out without destroying the honey, as I want to give these frames to swarms? Would it be better to let the swarms clean them out themselves.—ANXIOUS, Tweedmouth.

REPLY.—(1) If you rub a little vaseline on the racks the bees will not fasten them down. See last week's "Helpful Hints to Novices." (2) Give them to the swarms just as they are.

CURIOUS ADVERTISING.

We print below a curious advertisement for Antiracite Heating Stoves. Evidently French bees are very civilised, as they must, according to this, have commenced to clothe themselves:—

A LESSON FROM NATURE.
BE WARNED IN TIME.

Bees in hives in France have this autumn protected themselves with a double coating of wax. They once did so before, and the winter following was the severest on record.

N.B.—Don't forget that the winter only begins on the 22nd December and lasts till 21st March.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

REGULAR READER (Atherstone).—*Position for Hives.*—The bees will be all right in the position you describe.

J. M. (Caterham).—*Book for Beginners.*—The British Bee-keepers' Guide Book (price 1s. 8½d. post free) will answer your purpose.

Honey Samples.

F. H. B. (Saffron Walden).—The honey is a good sample and worth about 56s. per cwt.

Suspected Disease.

M. B. (Richmond).—The bees sent have evidently died through being imprisoned somewhere, or else they are robbers. The latter is very unlikely at this time of year. Every bit of hair has been stripped from their bodies.

E. S. (Cambridge).—Bees show every sign of "Isle of Wight" disease.

B. A. (Worcestershire).—The bees were so messed up with honey that we could not examine.

A. H. (Maidstone).—It is either "Isle of Wight" disease or malignant dysentery; we fear the former. Send some of the bees to Dr. Malden, Medical Schools, Cambridge, and let us know the result.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

LIMNANTHES DOUGLASII, strong plants, 30 6d., 60 9d.; seeds, 3d. packet, two 5d.; also Chapman's Honey Plant, seeds 4d, two 6d., free. REV. ANDERSON, Northam, North Devon. r 71

12 PURE WHITE WYANDOTTE PULLETS and COCKEREL, good strain, price £2 2s., f.o.r. and package free.—R. BROWN and SON Flora Apiaries, Somersham, Hunts. s 14

GOOD ENGLISH HONEY FOR SALE, in 28lb. tins; sample, 2d.—H. MATTHEWS, Wilden, Bedford. s 12

2 DOZEN glazed Sections, five dozen jars, 9s. per dozen, packed on rail.—STUBBS, Rempstone, Loughborough. s 8

3 DOZEN well filled Sections, 7s. 6d. dozen; 28lb. tins extracted Honey, 14s. 6d., or 56s. cwt.—MILLIS, Hill's-lane, Ely, Cambs. s 7

CLEARANCE, 12 new rapid tin feeders, 12s.; state wants (no bees).—G. E. BODE, 195, Plymouth Grove, Manchester. s 31

WANTED, unmarried man as gardener with knowledge of bee-keeping.—APIS, "B.B.J." Office, Bedford-street, Strand, London, W.C. s 30

FOR SALE, 3 Hives, with sections, accessories practically new; seen any time.—SCOTT, Vale House, Burnt Ash-lane, Bromley, Kent. s 21

FOR SALE, Extractor, good order, take one standard or shallow, 8s.—BENSON, 49, Woodland-road, Northfield. s 22

EXTRACTOR, geared, takes 4 shallow or 2 standard frames, excellent condition, 18s. 6d.—PARSONS, 52 Witham, Hull. s 24

FOR SALE, 60-egg Tamlin Incubator, or exchange 100-chick Foster Mother.—BOLEYNS, FARM, Bocking. s 23

CWT. choice Hampshire Honey, granulated, 60s. —ARCHER, 65, London-street, Andover, Hants. s 25

EXCELLENT HONEY, 24lb., in 2lb. screw caps, 19s. carriage forward.—N. REID, Caythorpe Hall, Grantham. s 26

HONEY, Northamptonshire, in lb. screw top bottles, light 8s. 6d., dark 7s. 6d. dozen; sample, 3d.—ANDREWS, Longthorpe, Peterborough. s 28

FOR SALE, five dozen excellent quality Sections, 8s. dozen, delivered. — HY. TOPE, Jun., Harberton, Totnes, Devon. s 6

SPECIAL OFFER.—Yorkshire Heather Honey, 9d. per lb. 14lb., 28lb. tins; sample, 4d.; Deposit.—J. B. MARSHALL, Garforth, near Leeds. s 1

WANTED, cloth bound "British Bee-keepers' Guide Book," volumes 1, 2, 3, 4, 5, 7, 14, and 15.—Particulars and price to HERROD, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

Editorial, Notices, &c.

MINERAL COMPOSITION OF THE BEE

We read in *l'Apiculteur* that a paper by M. Frederic Aronssohn was read at the Paris Academy of Sciences on this subject. The author says that in view of the exclusively vegetarian diet of the bee he wished to determine what mineral substances usually found in vegetables become fixed in the tissues of this insect. He has carried out his experiments with common drones, as these do not gather food from sources outside of the hive, and their diet is known with certainty. The bees employed for analysis came from a region having an argillaceous limestone soil of no industrial value, and where the agriculturists do not use insecticides or metallic fungicides of any sort.

The average weight of an insect desiccated at a temperature of 100deg. to 110deg. C. was found to be 0.062 grammes, the lightest being 0.058, and the heaviest 0.064 grammes. The results given below are: (1) per 100 grammes of insect dried at 100deg. to 110deg., and (2) calculated as regards their relative values.

The incinerations were effected at red heat, then the charcoal was washed in several changes of water, a small quantity of ashes being the result.

The determinations were made by the usual analytical methods on lots of 30 to 70 grammes of dried insects. The iron, zinc, and copper were weighed as sulphides. Manganese was estimated by the calorimeter, while the iodine and arsenic were analysed according to the methods of M. Gautier.

Ashes ..	4.23 gr.	$\frac{1}{23}$
Sulphur ..	1.413 gr.	$\frac{1}{70}$
Chlorine ..	0.294 gr.	$\frac{1}{374}$
Iodine ..	0.00009 gr.	$\frac{1}{3333333}$
Phosphorus ..	0.953 gr.	$\frac{1}{104}$
Arsenic ..	0.0000015 gr.	$\frac{1}{6666666}$
Silicium ..	0.034 gr.	$\frac{1}{2915}$
Copper ..	0.006 gr.	$\frac{1}{15384}$
Iron ..	0.015 gr.	$\frac{1}{6535}$
Manganese ..	0.002 gr.	$\frac{1}{50500}$
Zinc	0.012 gr.	$\frac{1}{8064}$
Aluminium ..	0.010 gr.	$\frac{1}{9615}$
Calcium ..	0.056 gr.	$\frac{1}{1767}$
Magnesium ..	0.099 gr.	$\frac{1}{1008}$
Potassium ..	0.025 gr.	$\frac{1}{3952}$
Sodium ..	0.049 gr.	$\frac{1}{2036}$
Fluorine	?	

The dominating ingredients are: sulphur, phosphorus, chlorine, magnesium, and calcium. The proportions of iron, zinc, and aluminium are nearly equal, while there is only about half the quantity of copper. If one considers the number of metals entering into the formation of the bee's organism and realises the action of these on diastase, it is reasonable to suppose that the mineral composition of the insect may have an influence on the chemical reactions which take place in the tissues of the bee.

REVIEW.

We have received from Messrs. R. T. Lang, Ltd., Tudor House, Tudor Street, E.C., a copy of their "Breeders' Directory," for 1912. It appears to be thoroughly complete so far as live-stock is concerned, and on matters agricultural there is a fund of information. The portion devoted to breeders of bees has evidently been compiled by someone who knows very little of the subject, and forms amusing reading; the names have evidently been taken from catalogues of shows instead of being obtained from a reliable source. There are names of people who never sold a queen bee in their life, while all the prominent queen rearers are omitted. The address of the "B.B.J." is also given as Henrietta Street, which we vacated two years ago. The price is not mentioned, but no doubt particulars can be obtained from the above address.

WORCESTERSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of the above association was held at the Shirehall, Worcester, on January 27th. Dr. W. E. Moore Ede presided over an attendance somewhat smaller than usual.

The Rev. Canon Coventry was re-elected president, and the names of Mrs. Wynne Marriott, Misses E. Johnson, H. H. Turner, and V. M. Wilson were added to the list of vice-presidents. The various officers were all re-elected, excepting the secretary, whose appointment was left to the committee.

Mrs. K. E. Smith distributed the prize medals to the various winners, and also third-class expert certificates to Messrs. Ash, Ballard, Bray, and Cartwright.

Votes of sympathy with the relatives of the late Colonel Long and the late Rev. J. Bowstead Wilson were passed.

Dr. Moore Ede brought some splendid samples of comb-honey from ling and bell heather, gathered in Northumberland by bees from Worcestershire. Those present were much interested in the differences of the flavour and other characteristics of these, and in Dr. Ede's remarks on the conditions necessary for the production of the best heather honey.—J. PHILLIPS, Hon. Sec. (*pro tem*)

OBITUARY.

MR. J. B. HALL.

We regret to have to announce the death, at his residence in Woodstock, Canada, of Mr. J. B. Hall, one of the most prominent bee-keepers in that Colony.

The late J. B. Hall was born in 1833 in Norfolk, England, but settled early in life in Canada. He was obliged to give up the business in which he was engaged owing to bad health, and as he was recommended an out-door life he took to bee-keeping as a livelihood. He began in a small way, having very little capital, and gradually enlarged his business, until he had as many as five hundred colonies. He was called the "Comb-honey King," of Canada, for he was one of the largest producers of comb-honey in the country. On one occasion he produced 25,000lb. of honey in the year, and of this 11,000lb. was comb-honey.

THE LATE J. B. HALL.

We had the pleasure of visiting Mr. Hall in 1887, at which time he had 400 colonies and had produced as much as 200lb. of honey per hive. We found him a most agreeable host, full of practical information which he was ever ready to impart. He had done very well with bee-keeping, for not only was he making a living, but he was bringing up a family on the proceeds of his apiary, besides owning the house which he inhabited. He was a Vice-President of the Ontario Bee-Keepers' Association, then a President, and a regular attendant at the Conventions, where he was the soul and wit of the gathering of bee-keepers, who looked to him for practical advice. Latterly advancing years had rendered it impossible for him to attend such meetings, and the Conventions have greatly missed his genial presence and sound advice. Mr. Hall was the first to introduce the thick top bar to the frame for the purpose of preventing burr and brace combs when the frames were properly spaced. He did not write for the journals as he told us he had not sufficient education for him to do so, but for all that, what he said at meetings or in conversation was always respectfully listened to, and showed him to be a thorough master of the subject.

On the occasion of our visit to Canada in 1887 the Ontario Bee-Keepers' Association held a special meeting in Toronto for the purpose of giving us a reception. The President, Mr. S. T. Pettit, was not able to attend, and the Vice-President, Mr. J. B. Hall, occupied the chair, and did

it in his own felicitous and happy way. At this meeting besides being made an honorary member of the Association, we were honoured by the presentation from the bee-keepers of Ontario of an address engrossed on parchment and a gold-headed walking stick, which we have ever since treasured as a token of the cordial reception which was accorded to us and the hospitality and consideration with which we were treated, thus bearing strong testimony to the good-will that subsisted between bee-keepers on both sides of the Atlantic. Mr. Hall was one of those who contributed towards this end, and bee-keepers cannot but feel that by his death the craft has lost a sincere friend.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

Procuring Surplus.

(*Continued from page* 32.)

Having considered in detail the methods adopted for procuring extracted honey, we now turn to those necessary for obtaining comb-honey. In the case of extracted honey, there is very little trouble entailed by the bee-keeper beyond preparing and putting on the supers at the right time. The bees do the rest. With sections the case is different, as much, if not more, depends upon human agency, and it requires not a little experience before good, saleable ones can be obtained. First of all let us consider the sections. "Which is the better to use, two or four bee-way?" is a question repeatedly asked by the novice. Personally, I have found the two bee-way give the best results. The comb is built up better to the woodwork of the section in these than in the four bee-way, the reason no doubt being that there is a dead stop for the bees to work up to, whereas in the four bee-way the bees pass through the sides as well as top and bottom, and it seems to me that they leave off about two-fifths from the wood, i.e., two rows of cells, to enable them to pass through more readily. The free passage from all sides is claimed as a great advantage in the work, but I have found this not to be the case. Again, if they do fill the section right to the wood, very often the cells in the last two rows just at the bee-way are drawn out too much, preventing the handling, cleaning and glazing of the sections without damage, an impossibility. No bee-way sections have been introduced, but these did not find much favour, and are used by only a few bee-keepers to-day. Probably the necessity of having a special divider prevented a great many from taking them up. I have seen very good work produced by means of the no bee-way section, and would certainly prefer them to the four bee-way. The section used should be the $4\frac{1}{4}$in. by $4\frac{1}{4}$in. by $1\frac{15}{16}$ in., as this produces the best work and does not need a special rack. The novice may have brought to his notice, or read in the back volumes of the Bee Journal, that at one time a section measuring 5in. by 4in. by $1\frac{3}{8}$in. was strongly advocated, and be anxious to try these. Experience has taught me that the novice is very apt to fall into one of three errors after about six months bee-keeping. He (1) is not satisfied with the native bee and spends money in importing foreign queens, which he will eventually regret; (2) is desirous of and does try all the so-called improvements in hives and appliances: often these are really fads introduced and championed by a few; or (3) commences to write for the papers advising people as to how they should manage their bees. I would strongly advise him to stick to the well-beaten path in which others have been successful until he gains knowledge by experience before attempting either Nos. 1 or 2; if he attempts No. 3, then he will make enemies, for the Scriptural teaching that "if the blind lead the blind, then both fall into the ditch," is singularly applicable. I speak from experience, for I have suffered by doing the first two, but with No. 3 I have been wiser and have waited twenty-five years before attempting it.

Having digressed a little, let us return to the tall section; the advantages claimed were that they sold better, as they presented a larger comb surface to the buyer. I find that the buyer looks all ways at an article he is going to purchase, and quickly sees the difference in thickness. We had good evidence of this when a few years ago at the Grocers' Exhibition, at the Agricultural Hall, Islington, the Canadians brought over with their exhibit of produce from that colony a large quantity of narrow sections which they tried to sell at a much lower figure than the pound sections produced in this country. Very frequently did I see them nonplussed by the prospective purchaser taking the section in his hand, balancing it critically and remarking, "But this is not more than three-quarters of a pound in weight. No thanks; I would rather pay a little more for a genuine English pound section"; and so they had to dispose of the consignment at a great loss, since which time no more have been sent to this country. Another advantage claimed is that the honey ripens quicker in a thin comb: this is a debatable point, but suppose we take it for granted that such is the case, and balance it against the extra amount of wax needed to cap the larger surface, we find the latter again

scores. Again, the claim that it can be worked in frames mixed with shallow combs is advanced in its favour, but with regard to this is it not true that a multiplicity of appliances and methods in one super gives indifferent results and is a nuisance in manipulation? One thing at a time, &c., applies here. Briefly the disadvantages are (1) that to use the tall sections it is necessary to have special appliances in the form of frames and dividers; (2) special glass or cases are necessary for glazing; (3) they are top-heavy, and do not stand firmly, being easily knocked over by a slight touch or jar. I have seen them fall off the staging at a show simply through the jar caused by a person walking by; (4) their thinness makes the buyer look with suspicion upon them.

NOTE.—Snow has fallen in many districts, see that the entrances are shaded, so that the bees are not attracted out by the reflected light; also clear the snow from the alighting boards and roofs. Any rearrangement of the hives should be carried out now, as the bees have been confined to the hive for some time by the frost, and will locate the new position on their first flight. Keep a sharp watch for tits and sparrows feeding upon the bees.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

APICULTURAL NOTES.

FOUL BROOD LEGISLATION.

[8354] Although the proposals for foul brood legislation have been somewhat modified since the last attempt was made to get a Bill passed, there are still clauses which, in my opinion, justify serious opposition. The Inspector's visit is undoubtedly one of the principal causes of objection. But whether we are in favour of or opposed to legislation, I think we are all agreed that while on the one hand there are up-to-date bee-keepers who are quite capable, and can be trusted to manage their apiaries in the best possible manner, and ought not, therefore, to be subject to Government interference, there are, on the other hand, a large number of hive owners who, through ignorance or wilful neglect, are a constant source of trouble and annoyance to those around them, and ought in some way or other to have their powers of mischief curbed. But if such persons can only be dealt with by an Act of Parliament which, while dealing with the guilty also inflicts injury on the innocent, then it is difficult to see where the net gain will come in. It is equally difficult to see where and how the line of exemption is to be drawn. The number of hives owned would form no reliable basis. Supposing the required number to be forty, an apiary might consist of, say, thirty-five stocks, more or less diseased. In that case it would only be necessary to form half-a-dozen nuclei, and the owner would at once be entitled to exemption. The possession of a third-class certificate would also fail to meet the case. One who has never had any practical experience with foul brood could gain sufficient theoretical knowledge of the disease to enable him to pass his examination. But theory and practice are two very different things, and do not always go hand in hand. It appears, therefore, that there is only one of two courses open, *viz.*, the Bill must either be defeated, or, if passed, must become universal and applicable to all without any distinction of class, rank, or file. It would be eminently unfair to send an inspector into a district for the purpose of clearing out foul brood with one hand tied behind him. Not only that, but should he succeed in accomplishing his object so far as regards apiaries to which he had free access, and there should happen to be a recurrence of the disease the following season, the blame would undoubtedly be laid at the door of those whose apiaries had been barred against him. Therefore, I, for one, much as I have been opposed to external interference, would not for reasons just stated claim exemption. What I regard as far more serious than the inspector's visit is the prohibition of the sale of honey from an apiary where foul brood has broken out—perhaps in the middle of the honey season. Pro-legislationists argue that compensation for the destruction of diseased stocks ought not to be allowed on the grounds that such stocks are worthless. If the latter be true, then it must be apparent to all that whatever surplus honey the bee-keeper may have secured must have been gathered wholly and solely by his healthy stocks, and does not, therefore, contain disease germs. Then why prohibit the sale of it? If, on the other hand, foul broody stocks have helped to gather the surplus, then it cannot be said that they are worthless, and why withhold compensation for this enforced destruction? As regards honey being bought

to feed bees. I think this a very remote probability. Personally, I don't know of a single bee-keeper who ever buys honey for that purpose, either good or bad, and I should, for more than one reason, consider him very foolish if he did. But supposing there is risk in that direction, and to prevent that risk it is considered necessary to prohibit the sale of honey from all affected apiaries, would it also be considered necessary to prohibit the importation of all foreign honey, wax, and bees, including queens? Or are we going to bind down the British bee-keeper by means of an Act of Parliament and at the same time allow the foreigner a free hand? We hear a good deal about patriotism nowadays, and it is to be hoped that the framers of the Foul Brood Bill will possess at least a sufficient amount of that spirit to enable them to see that their own countrymen are not crushed and the foreigner at the same time benefited. Surely if there is risk with the home product that risk is very much greater with the foreign article, which is very much cheaper. There is another very serious aspect to the question which ought not to be overlooked. Let it once be notified that so-and-so is not allowed to sell his honey on account of it containing the germs of disease, and good-bye to his customers. The public, as a rule, are terribly frightened at the mere mention of the word contagion. Let it once become impressed on the minds of the public that honey contains disease germs —never mind what disease it is—and you will have done something which will take a very long time to undo—viz., very much longer than it will take to ruin hundreds of bee-keepers, and to do an irreparable amount of injury to the bee-keeping industry in general. In my humble opinion, the less that is said, outside the bee-world, about honey containing disease germs, the better.—Allen Sharp, Cambs.

NON-POROUS v. ABSORBENT QUILTS.

[8355] I am grateful to "T.D.N." (page 46) for his letter on this subject. I only trust the matter I have brought forward will be adequately discussed. I have no wish to dogmatise, but am merely seeking information and am anxious to learn from others the views they hold and the reason "for the faith that is in them."

In answer to "T.D.N.," may I say that propolis, according to the authorities I have consulted, is undoubtedly a substance which, when applied by the bees to a crack or crevice in the hive, renders it impervious either to air or water, except possibly under considerable pressure. I never suggested that propolising was hermetically sealing. Few substances will stand hermetically sealing. A half-inch wooden board would be porous if subjected to the test of a vacuum suction pump, and it is probable that such a board covered with a coating of propolis might also prove porous when submitted to such a test, but surely "T.D.N." would not, therefore, suggest that such a board was as porous as a bag of sawdust or chaff.

Let "T.D.N." try the following simple experiment: Get a skep without a top-hole, that has been in use for a season or two, and is therefore propolised all over the inside, and fill it with water, and do the same to a section super with sacking tacked on the bottom filled with sawdust or chaff, and see how long each will retain the water.

In writing of wild bees having "absolutely impervious coverings" I was referring, not to burrowing bees, but to the ancestors of our domestic bee having their homes in hollows in trees. I feel sure I am justified in saying that, in the thousands of instances of this sort where the hollow is, say, half way up a tree from thirty to forty feet high, and there are, therefore, some feet of solid wood above the cluster, the covering is "absolutely impervious," and I have no doubt many of your readers, could they be induced to say so, have met with numerous cases of colonies lodged in trees with a considerable depth of solid wood above them, and no other ventilation than the entrance hole affords.

Why weight should be a drawback I fail to see. Expense is a drawback, I admit, but after all a glass quilt will last for at least twelve years without depreciation and a penny a year is not much to spend on a hive.—J. G. Dalzell.

COTSWOLD GLEANINGS.

[8356] I read with much interest the article on p. 33, by Mr. J. G. Dalzell, and think he presents some strong arguments in favour of non-porous coverings in the shape of glass quilts. They certainly seem to possess many advantages. The only apparent drawback, in my opinion, is the cost, and risk of breakage, unless carefully handled.

In order to prevent propolisation, and facilitate handling during the honey season, a single thickness of calico or canvas might be used under the glass, which would greatly reduce the risk of breakage, and possibly stings, when working rapidly. Bees have a curious habit of biting the calico quilt into holes, and this allows the felt coverings to be stuck to the frames and makes their removal rather difficult.

In order to avoid this I have used a thick canvas inner cover, which answers the purpose well, for the bees soon cover it with propolis, and thus make it water-

tight and airtight; moreover, it can be stripped off easily without tearing, and irritating the bees. I might mention that colonies packed with a sealed cover are provided with an entrance, 16in. by ⅜in, thus allowing plenty of bottom ventilation, which is so essential for successful wintering.

With regard to the suggestion of Mr. A. Harris and the Editor's footnote, p. 36 (8346), may I be permitted to say that I consider legs on hives as much a nuisance as platforms for them to stand upon, and cannot understand why they are so largely used? At one time I possessed several hives with legs, but have had these sawn off, and all the hives now stand upon four bricks or blocks, one at each corner of the floor-joists. I have in use seventy hives, and have made and stored away forty more for use during the coming season, but none of these have "a leg to stand on," or a porch or a sloping alighting board, which is deemed so necessary by the average apiarist.

As bee-keepers are seldom rich men, everything about an apiary should be of practical value, and though these things may add to the appearance of the hive, yet I cannot see they have any practical value, but rather tend to make it heavy and clumsy to move by road or rail.

I think that the good advice and photographs in "Helpful Hints for Novices" will be greatly appreciated by all new members of the craft, as they so clearly illustrate the different stages of manipulation, and should prove a valuable addition to the JOURNAL. It would be interesting to know the opinion of other bee-keepers on the subjects raised.—A. H. BOWEN, Cheltenham.

GLASS QUILTS.

[8357] The letter in the "B.B.J.," January 25th (page 33), by your correspondent Mr. J. Dalzell, is most interesting. I gather that the quilt consists of a square of glass in a frame, say, 1in. wide and arranged to give a bee space on the under side, the whole large enough to cover ten frames. There is also a 3in. hole in centre of glass, covered by a 5in. square.

I would like to ask your correspondent how he manages when the brood-nest is contracted to, say, six frames, because there will then be a leakage space between the dummy and the glass. I take it that the glass is removed when supers are put on, although this is not specifically stated. I am sure a number of readers would like full particulars. The extra cost of orange or ruby glass would be but small, and the bees would be less disturbed on exposing the uncovered glass.—E. B. WEDMORE.

SOUTHERN SNATCHES.

[8358] A very pleasing feature of the "B.B.J." during the latter part of the year 1911 was the reports from the various bee-keepers of the fine honey harvest that the season has yielded pretty generally all over Great Britain. Bee-keepers in the homeland have had a run of bad seasons lately as well as a run of bad diseases amongst their bees, and it is truly gratifying to their comrades in the craft in this country that at last their optimism (which is an inherent trait in bee-keepers) has been rewarded. May the season of 1912 be even better in every respect than its predecessor is the wish of the writer.

Another gratifying aspect of the season under review was the evident check of the ravages of the deadly "Isle of Wight" disease. Brother craftsmen in South Africa are at one with you in the hope that this disease has spent its fury and will be no more heard of in the future.

The letter of greeting and encouragement from your Editor, the veteran Mr. Cowan, appearing in the second issue of the S.A. Bee-Keepers' Journal, was a feature that must have appealed strongly to all S.A. bee-keepers who read it. His words of congratulation and encouragement are very highly appreciated and add another proof of the bond of union and good fellowship existing amongst bee-keepers all over the world. The journal just mentioned is the newest addition to bee periodicals, and fills a long-felt want among bee-men on this sub-continent, and we all look forward to important issues in its sphere of usefulness and advancement in bee-keeping in a country that has done much lately in that respect, but has still much to do.

There are many subjects in the "B.B.J." appearing from time to time that one would like to touch upon and compare with our experience in this country if it were not that distance is so great and conditions so different. Mr. Macdonald page 475, Vol. 39, quotes Mr. Townsend as stating that: "It is the man not the hive that produces tons of honey annually." No doubt there is a lot in the man, but my experience is that the locality plays a greater part than either man or hive. You may manage your bees ever so carefully, and manipulate ever so skilfully, but for the yield of honey you must look to the wealth of bloom in your immediate neighbourhood. Here is a case in point. Towards the end of the year 1907, when I had watched and waited in vain to get a single section filled, I was prevailed upon by a friend to bring my bees to his place, a distance of five miles away. As a forlorn hope I took one hive with supers holding some

forty sections in all. Six days later my friend called and told me the sections were all full, which, of course, I did not credit, and put down his statement to his lack of knowledge of bee-keeping, also to the fact that I had put a few half filled bait sections in the super. However, three days afterwards I cycled out to see for myself and was amazed to find that it was actually as my friend had said, every section full of beautiful honey. A downpour of rain before I had time to return with supers made my bees inaccessible for another ten days; when I returned I found the sections sealed and ready to take off, every section weighing 15oz. to 17½oz. The honey flow was going off by the time I put on fresh supers of shallow frames, and I only got about 20lb. of extracted honey. Now, my hives at home that were worked for *all I was worth* did not give a dozen pounds during the whole season. Now where does the man come in here?

This is only one instance in which locality plays first part, but I could give many more.

The old bone of contention, Drone v. Worker comb, still receives its due meed of attention. There is one fact it emphasizes to me, and that is that the bees at home are not so particular as to what they accept as mine are. Here they will only work drone comb readily when the honey is coming in freely, but as soon as it slackens off they attempt to convert the drone base to worker, and make a frightful mess of it. However, if given the drone comb when properly drawn out they fill it just as freely as the worker comb, and no doubt following the bent of natural instinct make the cells deeper. There are, no doubt, advantages in drone comb, as enumerated by Mr. Herrod and Mr. Crawshaw, but the drawback just mentioned outweighs all others with me.

Mr. Crawshaw (page 488, vol. 39) points out a possible disadvantage in Mr. Harris's wooden extractor. Wood, no doubt, requires careful handling to keep it sweet. In this country it would require careful watching to keep it whole owing to shrinkage through variableness of climate, and if hooped as a barrel would require to be kept full of water half the season. Tin, on the other hand, requires equal care to keep it from rusting, and so to get over both disadvantages I make my extractors from galvanized iron, which is stronger than tin, and practically everlasting. I have seen it stated more than once that honey has an action on galvanized iron that quickly taints the honey if kept in contact with it, but have never found it so. I always take the precaution of drawing off the honey as soon as it is extracted, but for a test have left a little in the extractor for days, but never found any ill effect from the metal. Mr. Crawshaw's method of letting the bees clean the extractor is a very good one provided one has ground enough to place it far enough away from the house and the apiary. I used to get all my extracting frames cleaned that way and a splendid job they made of it, but I should not advise practising it where the bee-keeper has only a small patch of garden to work on.—H. Martin, Durban, Natal.

THE SHORTENED DIVISION-BOARD.

[8359] Though a bee-keeper for over forty years I have never written to the bee papers, but the letter of a fellow townsman (Mr. Harris) on page 25, with regard to the shortened division-board gives me the opportunity of saying that all my hives have the frames at right angles to the entrances, and the shortened division-board. I have used it for nearly the whole of the time I have kept bees, and think it has great advantages; for instance, behind the board the bees can be fed, frames after extraction and partly filled sections can be cleared out by the bees. The board I use is made the same size and hung exactly as an ordinary frame, with a space of half an inch or more at the bottom. I should be pleased to show Mr. Harris, or any other neighbouring bee-keeper, my hives at any time.—A. J. C., Oxford.

A CRITICISM.

[8360] The articles appearing in the journal under the title "Useful Hints for Novices" are so valuable, not only to beginners, but to older members of the craft, that they will no doubt be cordially welcomed by all readers. Coming as they do from the pen of such a past master as Mr. Herrod, one feels that it would almost be the very acme of presumption to offer any criticism upon the methods he describes. It is therefore with a feeling of fear and trembling that I venture to make the following remarks upon the article headed, "Procuring Surplus," Jan. 11, page 12. 1. The tool recommended, namely, a "good strong screwdriver." A screwdriver is usually rather narrow, rather thick, and more often than not is round in the stem. The use of such a tool for levering up a full super, weighing 20lbs to 30lbs, is extremely likely to bruise the edges of the box in such a manner that nasty air-spaces will be made. A flat chisel ¾in. to 1in. broad is better for the purpose. 2. The four blocks

of wood ½in. thick. These are too thick, as they leave space through which bees can pass out; and in the event of it being necessary to wait and cover up the hive as described they certainly will come out in numbers, necessitating a *second* smoking to drive them in. Four bits of a broken section answer the purpose perfectly and do not allow a bee space. 3. Instead of lifting the super on to the escape board, and then placing the two together upon the hive, it is better for many reasons to place the super down upon the lifts (a light bar of wood being first laid across the lift), and then to cover the hive by placing the escape board upon it: the heavy super can then be lifted on to escape board with as much deliberation as one likes. By this slight modification in the order of procedure not only is the hive more quickly covered (obviating the necessity of a *third* smoking. *See* Fig. 4, p. 13), but when the heavy load is replaced there are absolutely no bees in the way, and it is more easy to place the rack down gently. The entire operation from beginning to end involves *one* whiff of smoke only, namely, when the first corner of the super is raised. Its full quietening effect will have taken place by the time the four slips of wood are inserted. If the super is then at once lifted off and the escape board immediately put on, no further use of the smoker is necessary, and the risk of tainting the honey is reduced to a minimum. I say *Amen* most heartily to Mr. Harris's remark (page 14) *re* the "ten frame hive." I have long since scrapped those I had and would not accept one now as a gift.—G. S. N., Godstone.

[The writer of "Helpful Hints" has obtained a great deal of his knowledge by healthy criticism of his work, and is only too pleased to receive that of a similar kind to the above. He tries to be as simple and clear in his writing as possible; therefore critics help in a double sense by helping to point out mistakes (and who is infallible?), and also to show where he has failed to make himself understood. So far from considering the criticism presumptuous, he looks upon it as a kindness for which he is grateful. Now, with regard to the points mentioned: (1) let me say first of all I am a practical carpenter, and as such, know the danger of using a chisel for levering purposes. This, as often as not, will break on account of its being tempered steel (while a screwdriver is iron); if even that does not happen gaps will be made in the edge, which will require to be ground out before the chisel can be used for its legitimate work again. If the chisel so treated happens to belong to a good workman, he will probably pass the same remarks as one does when the lady of the house uses one's choice razor for cutting corns or string. Certainly, the screwdriver should be a broad one (the point I missed), and it should be used as shown—parallel with the side of the super, the end of which faces the operator; in this way leverage is obtained without damaging the wood, for it is carried out the same way as the grain runs. (2) Experience has taught me that in many cases the piece of section, which I also have used, does not separate the two supers sufficiently to allow the bees to properly clear up the honey which leaks through broken brace combs; therefore, I quoted for the majority. (3) I quite agree that it can be done as well this way as the plan I gave; this also applies to several other methods, but I chose one only on account of space.—W. H.]

Queries and Replies.

[8278] *Honey, a Blood Purifier.*—Will you kindly answer me the following in the next BEE JOURNAL if possible? According to the various bee books, &c., it mentions honey, besides other things, as being a "blood purifier." Now, one of my best retail customers, to whom I mentioned honey as being a blood purifier, repeated it to his doctor, who said it was all "bosh." My customer told me of this, but was not satisfied with my showing him bee books containing this statement, and I want you to tell me why it is a "blood purifier," and also some names of men high up in the medical profession who say it is such, and also any other point you think might help me. I should not bother you if my customer was really not a good one, but as my customers live all close together it would do me a lot of harm if I could not prove to this man that honey is a blood purifier. Does the book, "Honey and Health," procurable at your office, mention anything about this subject? Thanking you in anticipation.—H. S. (Hazel Grove).

REPLY.—Yes, "Honey and Health," by Archibald Hope, contains many references to the beneficial action of honey on the blood, and would be useful for your purpose, the question you ask being there answered. There have been a good many articles published by eminent doctors on the Continent, who have studied the matter, all being agreed on this question. So recently as last September a long article by Dr. Victor Arnulphy appeared in *l'Apiculteur* of Paris, in which he discusses at some length the hygienic properties of honey and the harm done by

the consumption of sugar, and advises a return to the use of natural sugar in the form of honey.

[8279] *White Patches in Granulated Honey—Expert Examination.*—I am forwarding you by this post a one pound jar of honey. Would you kindly tell me why it has gone (1) white in patches, also (2) why is it so very hard, would be it (3) good enough to put on the show bench in its present state, or can I do anything to improve it? I have never shown honey before, and should therefore be very glad of the expert advice which I see so freely given each week in the BRITISH BEE JOURNAL. (4) Is there any book that I could get that would help me in preparing honey for the show bench? (5) I wish to become an expert: could I obtain anywhere papers or information as to what questions I should be likely to be asked to get a third-class certificate? We have no county association to which to apply. I have used the "Guide Book" and the BRITISH BEE JOURNAL to good account this year, averaging 77lbs. of honey per hive. My best hive gave me 140lbs.—E.R.C.M., St. Buryan.

REPLY.—(1) White patches are caused by air getting in at the time of bottling. (2) It is hard because it is a very good, well-ripened honey. (3) It will do to show as it is, you cannot do anything to improve it. (4) A book on the subject by Mr. Herrod will be published shortly, and will give you all the information you require. (5) You cannot obtain the questions asked at the examinations. For Third Class certificates it is necessary to have a good practical knowledge of bee-keeping, including queen-rearing, diseases, the natural history of bees, &c. The book to study is the "Guide Book," and if you know this well it will help you. Also you would be required to drive a skep of bees and manipulate a frame hive.

[8280] *Various Queries.*—As a two years' novice in the bee-keeping craft and a regular reader of your most helpful BRITISH BEE JOURNAL, I would like, through its columns, your advice on the following:—(1) Do you recommend a ten, eleven, or twelve frame hive for ordinary purposes? I have tried all three and have obtained best results from the two latter. (2) Are double-storey brood chambers advisable, by adding either a shallow frame super or a standard frame super over the ordinary? (3) Last September I hived a lot of driven bees (purchased through your advertisement columns) on four frames of sealed honey, one containing a little brood, in a twelve frame hive along with another stock contracted to eight frames, separating the two with a perforated division board. I gave each a 1lb. box of candy at the beginning of this month. (a) How much more candy will the driven lot require? (b) Will it build up strong enough to give surplus on its own account this season? Wishing the "B.B.J." every success.—H.R., Lincoln.

REPLY.—(1) The ten frame hive is the best for most districts, but if you succeed with the larger size then by all means use it. (2) No. (3) (a) Watch the candy, and immediately it is used give another cake. Continue this till the end of March when syrup can be given. It is difficult to say what quantity of candy they will require, as much depends upon the weather. (3) (b) With careful attention they should build up and give you surplus.

[8281] *Using Last Season's Comb-honey as Food for Bees.*—Please advise me on the following through the medium of your valuable paper, the "B.B.J." I have eight shallow frames more than half filled with honey from last season, which, being so thick, I could not get to run in the extractor. It is in good condition. Will it be harmful to give them to the bees, when time arrives for doing so, in that condition, or must I get all the honey from the combs? I thought of dividing the frames amongst four hives, two to each, putting them on early to let the bees eat up the honey. If not a good plan please advise the best way to get the honey out. Thanking you in anticipation.—H. W., Pen.

REPLY.—You could use the honey as stimulative food in the early spring by uncapping the combs and putting them in the brood-chamber in place of one of the outside combs. Remove the shallow frame as soon as the honey is cleared out.

[8282] *Badly Made Candy.*—Will you kindly supply the information to following:—(1) Recently there have been many letters in "B.B.J." re stores. I have three hives; each contains about 27lb. syrup, some sealed and some not sealed (14th Oct., 1911); they were fed rather late, due to some of the stores being taken to help another colony. Each hive also has an 8lb. cake of flour candy. The candy, being hard at first, was heated and a little water added; it formed a thin paste but did not go quite into solution; it set well at the time, being quite satisfactory. Early in December I found the floor-board mouldy and on removing it I found patches of liquid candy, yet the cake on its upper surface is very hard. What is the consistence of underside of cakes likely to be? Will the syrup be enough without candy? (2) In the third hive grains of flour on the floor-board seem to be quite wet. The Claustral-chamber on this hive is kept closed, also on all the hives certain very inexpensive blankets, used as quilts, are often quite wet, whilst the old bed-blankets are all right; this happens whichever is uppermost. Does

the moisture come from within or without? If brown paper is placed between the blankets will it hold moisture in the blankets and cause above trouble? I have had to dry them twice this year. (3) Will queens introduced August last be worth keeping after this year? (4) Are four dead bees per day a reasonable mortality?—S. A. B., Derbys.

REPLY.—(1) The candy should have been entirely re-made. If you remove the top crust no doubt the candy underneath will be soft. 27lb. food should be sufficient. (2) Probably the damp is caused by some dressing in the manufacture of the material from which the blankets are made. Probably also the brown paper would help to hold the moisture. (3) They will no doubt be worth keeping another season. (4) Not abnormal.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

January, 1912.

Rainfall, 3·71 in.	Minimum temperature, 24 on 29th.
Above aver., 1·22 in.	Minimum on grass, 19 on 29th.
Heaviest fall, ·64 in., on 8th.	Frosty nights, 11.
Rain fell on 20 days.	Mean maximum, 44·6.
Sunshine, 28·5 hours.	Mean minimum, 35·5.
Below average, 39·8 hours.	Mean temperature, 40·0.
Brightest day, 28th, 6·8 hours.	Above average, 2·4.
Sunless days, 22.	Maximum barometer, 30·484 on 1st.
Maximum temperature, 51 on 8th & 9th.	Minimum barometer, 29·126 on 6th,

L. B. BIRKETT.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

E. L. (Co. Down).—*Publication of Book.* "Producing, Preparing, Exhibiting, and Judging Bee Produce," by W. Herrod, is now completed, and will be published at an early date. In it you will find the method of procuring show sections fully explained.

J. B. (Bristol).—*Bees Dying in Well Provisioned Hive.*—The death of bees by starvation when there is food in the hive, is caused by the bees being so reduced in numbers that when the food just round them is consumed, they have not energy enough to move along to the other combs. No doubt you noticed that a great many were dead in the cells with head downwards.

(Mrs.) J. C. (Ludlow).—*Too-dense Honey.*—Instead of grumbling, your customers ought to be pleased to get honey of such consistency; it is excellent. The dark honey will do to feed the bees; add about one-quarter of its bulk of water and boil it.

Suspected Disease.

J. W. G. (Wembley), W. R. D. (Herts), and F. H. (Letchworth).—It appears to be a case of "Isle of Wight" disease.

QUERIST (Kent).—The bees are badly constipated, and no doubt this has caused their death.

C. V. B. (Middlesex).—We are afraid it is "Isle of Wight" disease. Many thanks for your kind appreciation of our papers.

Honey Samples.

F. H. (Warrington).—The honey is from mixed sources, ragwort and blackberry flavours predominate.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, well filled light coloured Sections, 7s. 6d. per dozen, well packed.—HUBERT LAW, Croydon, Royston, Herts.

LINCOLNSHIRE HONEY, 28lb. tins, 56s., 60s. cwt.; sample, 2d.—WILLIAM ABBOTT, Thorpe Bank, Wainfleet. s 48

QUANTITY shallow frames, crates, drawn out combs, perfect condition and healthy, 3s. 6d. each; feeders, 9d.; smokers, 1s. 3d.—RANDALL, Winchmore Hill Station. s 42

HEREFORDSHIRE HONEY, half ton, in 28lb. tins.—TURNER, Madley, Hereford. s 46

FOR SALE, 1½cwt. finest Extracted Honey, medium colour, 56s. per cwt., carriage paid, in returnable tins; sample 1lb. bottle, 9d.—A. COLEMAN, Sherington, Newport Pagnell, Bucks. s 45

WANTED, weed foundation, Cowan's extractor, eleven gross shallow frames, and metal ends.—MACE, Exning-road, Newmarket. s 47

HIVE, painted, 2 racks, sections, all new, 10s. 6d. bargain.—TREVENER, Chesham, Bucks. s 43

Editorial, Notices, &c.

GLOUCESTERSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of the Gloucestershire Bee-Keepers' Association was held at the Wessex Hotel, Gloucester, on 29th Jan. The Hon. Secretary reported a considerable increase in the number of members, and the balance-sheet was considered satisfactory, in view of the heavy expenses involved by the Honey Show.

Mr. W. M. Colchester-Wemyss, Chairman of the County Council, was elected president. Rev. F. H. Fowler was reappointed hon. secretary and treasurer. The following were appointed on the Committee:—Messrs. G. A. Calvert (Lydney), H. E. Bailey (Norton), A. H. Bowen (Cheltenham), E. J. Burtt (Gloucester), W. F. Pick (Dursley), F. Thomas (Cam.), W. A. Workman (Husslecote), G. C. Langston. W. J. Goodrich (Gloucester), J. W. Watkins (Cirencester Agricultural College).

A resolution was passed that "this meeting is in favour of supporting the B.B.K.A. in any legislation that may be deemed advisable, with a view to checking foul brood and 'Isle of Wight' disease."—F. H. FOWLER, Hon. Secretary.

HEREFORDSHIRE B.K.A.

ANNUAL MEETING.

The first annual general meeting of the Herefordshire Bee-keepers' Association was held in the library of the Shire Hall, Hereford, on Wednesday, Jan. 31st. Sir James Rankin, M.P., as President, took the chair, and there were present a large number of members representing all parts of the county.

Mrs. Mynors, the Hon. Secretary, gave an exceedingly interesting report for 1911, commencing with the resuscitation of the association in April last under the chairmanship of Sir Robert Lighton and the progress of its organisation. The Association started work as from July 1st, a half-year's subscription only being collected for 1911. The County Council Agricultural Committee agreed to allow a grant of £10 for the year 1911, and a further application was to be made for 1912, also to continue to provide lectures on bee culture.

The Association had made satisfactory progress during the short time of its existence, 139 members had been enrolled, and local secretaries reported many promises for 1912. Eighty-one apiaries were visited by experts in the autumn, 291 frame hives and twenty-one skeps examined, ten cases of foul brood reported, only three stocks had to be destroyed, in each case advice being given for treatment, and when necessary a second visit being paid by the expert to see that his directions had been carried out.

The Treasurer detailed the accounts, which showed that the receipts, including the £10 grant, amounted to £41 1s. 7d., and the expenses to £31 16s. 11d., leaving a balance in hand of £9 4s. 8d.

Both report and accounts were adopted.

The vice-presidents and committee were re-elected, and the President proposed the re-election of Mrs. H. B. Mynors as Hon. Secretary and the Rev. H. B. Mynors as Hon. Treasurer.

Mr. F. Moore, in seconding, said they had to thank Mrs. Mynors for the flourishing progress of the Association, and were indebted to her energy for obtaining the £10 grant. The resolution was carried unanimously.

After a discussion on a proposed alteration in the rules, a vote of thanks to Sir James Rankin for presiding concluded the meeting.—(Mrs.) H. Mynors, Hon. Secretary.

DEVON B.K.A.

ANNUAL MEETING.

The annual meeting of the Devon Bee-keepers' Association was held at the Guildhall, Exeter, on Feb. 2nd. Lieut.-Colonel H. J. O. Walker presided.

The Council, in presenting their 14th annual report, stated it was gratifying to note that the strength of the Association was still well maintained, the number of members being 277, the same as last year. The accounts also showed a balance on the right side. The insurance scheme had been made use of by forty-five members, insuring 647 hives, an increase over previous years. But considering the advantages offered it was surprising the scheme was not made more use of. Honey labels had been greatly in demand during the year. The total number issued was 9,075, more than double the number ever issued before. Bee-keepers in Devon might congratulate one another that whilst other counties had been worried with the "Isle of Wight" disease it has not established itself in their county, nor had foul brood, that old bane of bee-keepers, been so prominent.

The statement of accounts showed a balance in hand of £7 16s. 9d. on capital and of £5 0s. 5d. on revenue.

The Chairman, in moving the adoption of the report, said it was very satisfactory to see they maintained the number of members. He saw it mentioned that there was a quantity of section honey still left on sale, and he understood there had already been some consultation as to how such a matter could be best met. An hon. secretary whose time was very largely occupied could not sell honey for members in general. He wondered whether two or three could combine as one little firm.

Bee-keepers should keep a very sharp look-out for "Isle of Wight" Disease, and if they saw their bees fail in their endeavours to fly, and the whole colony apparently becoming weaker, and if the inner wing was out of order and detached from its proper place, they could prepare for the worst. The best way to deal with an outbreak was to get rid of the whole colony.

Mr. F. P. Smith seconded. The report and balance-sheet were adopted. The officers and committee were elected, Mr. R. W. Furze, Woodbury, being re-appointed hon. secretary. An advertising scheme to enable members to get rid of their surplus honey was recommended by a sub-committee and agreed to.

Votes of thanks to the Mayor of Exeter and the Chairman concluded the meeting. —*Communicated.*

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of January, 1912, was £1,881.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

AMONG THE BEES.

By D. M. Macdonald, Banff.

AN EDUCATION COMMITTEE.

Looking over some old reports of the B.B.K.A., I noted that five, amongst the most prominent members of the Council, formed an "Education Committee." The latest Report shows no such committee! This is surely retrogression, and that, too, in a phase of apiculture where such "progress" is inexplicable. Taking at present only one subject likely to be relegated to an education committee, viz., Expert Examinations, I find that in the earlier report only twenty-two candidates presented themselves, whereas in the later one I took up by chance, 130 *passed*, thus showing that there is more than ever a need for a special committee to supervise this important branch of the Council's duties. It looks, indeed, as if this work were being treated by the Council as a whole as of minor importance. Is this so?

Again, what appears to me as an anomaly is that while the Council insists on third-class examinations being conducted by second-class experts, the most severe part of the test for a first-class certificate—the lecture—is conducted mainly, if not entirely, by gentlemen who have not themselves undergone the ordeal, even in the third degree. Qualification for most degrees known to me is tested by men personally possessing the particular degree.

A Sealed Book.—The skep deserves the title. The life history of the colony inhabiting such a domicile is unknown and unrecorded. The frame-hive is to the initiated an open book, whose every page lies manifest to the eye of the bee-keeper who owns it. We in this twentieth century glory in being in advance of the dark ages, but in the use of this super-annuated old receptacle we are wilfully aiding in keeping a remnant of the past in perpetuity in our midst, much to the detriment of the craft. Let me plead for its elimination, its suppression, or annihilation, not by the strong arm of the law, but by the no less strong influence of example and the teachings of commonsense. Let all advanced apiarists combine in carrying out the war of extermination, both by precept and example. Let the B.B.K.A. wipe out the very name from their reports and syllabus. Let the issues of latest editions of bee-books show no illustration of the skep, not print the word in the text, and mention only frame-hives. Let appliance manufacturers cease to stock it. Let show authorities, as, I am glad to say is generally the case even now, utterly ignore it. Let County Committees name it only to condemn it. Let their secretaries and experts urgently dissuade all beginners from investing in this antediluvian bee-domicile. Our bee-papers should treat the very word as an obsolete one, which has dropped from use. Some such effort and combination might help to send it down to oblivion unwept, unhonoured, and unsung!

Convinced as I am that countenancing skep apiculture is a grave mistake—a keeping of the wheels of Time back—I cannot, however, approve of compulsorily extinguishing this branch of our craft by means of an Act of Parliament declaring the use of skeps illegal. Introducing such a clause in the projected Bill would overweigh it to the danger of swamping. Many favour the idea, but we should remember that, excellent although the end and aim desired may be, all things are not expedient.

A correspondent (page 24) pleads for the old skep on account of its cheapness, maintaining that if it were eliminated many cottage bee-keepers would drop out, because "they cannot afford more than the cost of a straw skep." That frame-hives cannot be made about as cheap as a good straw, I have recently shown to be a fallacy. The *pressure*, however, should not be brought to bear when bee-keepers "drop out," but when they "drop in" to the pursuit; in other words, all able to exert any influence should teach beginners that not only can the initial start be made for much the same figure, but they should advise those starting how very much better returns can be secured by the newer and better bee-domicile. Leaving cottars who now

believe in skeps to work on with them, bee-keepers should concentrate their efforts on the young, whose ideas are not warped, but who have open minds ready to assimilate new facts.

Glass Quilts.—Mr. Dalzell (page 35) has my best thanks for his offer of one of these, but I have to decline acceptance because on two former occasions I have weighed them in the balance and found them wanting. About twenty years ago, and then about ten years later, glass quilts were boomed in the JOURNAL and very many experimented with, with the result that I would judge at least nineteen out of every twenty gave them up as a bad job. I myself found them, for various reasons, a nuisance, and was glad to see the last bit of broken glass *buried*. They were very nice in some ways, but I would pity the owner of a large apiary if he were bound to confine himself to glass covers. I don't claim for *sealed* covers—glass, wood, celluloid, or oilcloth—that bees cannot be well wintered under them, but I maintain that while some of these may be good, others better, yet porous coverings are the *best*. This contention, I think, ninety-nine out of every hundred bee-keepers will agree with!

The "sealed" covers are, I know, approved by Messrs. Root and many extensive American apiarists, but, if I can gauge the trend of opinion over there, it is markedly progressing towards faith in the quilt. It is rather worth recording that about forty years ago—when *Gleanings* and our BEE JOURNAL were started—bee-keepers in this country believed out and out in a "crown-board"; they, over there, pinned their faith to the quilt. Whenever British bee-keepers had been taught the advantages of porous coverings they adopted the system, which has been used since almost universally. To quote Mr. C. N. Abbott's words: "Every bee-keeper who once got his crown-board off his hive never put it on again, but adopted that best of all arrangements, the quilt."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEE DISEASE LEGISLATION.

[8361] I have noticed on several occasions fear expressed by some of your correspondents opposed to bee legislation, of the misuse of power which must of necessity be given to any person appointed as inspector under an Apiaries Act, if such legislation is calculated to do any good. This fear, I am bound to say, is, like many of the other objections put forward by opponents to legislation, chimerical. No greater proof of this can be given than our experience in New Zealand, where absolute power is given to inspectors under our Apiaries Act to carry out its provisions, and against whose decisions, where disease is concerned, there is no appeal, as witness the following sections of the Act:—

"POWERS OF INSPECTORS.

5. Any Inspector may enter upon any premises or buildings for the purpose of examining any bees, hives, or bee appliances, and if the same are found to be infected with disease he shall direct the bee-keeper to forthwith take such measures as may be necessary to cure the disease; or, if in the opinion of the Inspector the disease is too fully developed to be cured, he may direct the bee-keeper within a specified time to destroy by fire the bees, hives, and appliances so infected, or such portions thereof as the Inspector deems necessary.

INSPECTOR'S DIRECTIONS TO BE OBEYED.

7. (1) Every direction by an Inspector shall be in writing under his hand, and shall be either delivered to the bee-keeper personally or sent to him by registered letter addressed to him at his last-known place of abode.

(2) Every such direction shall be faithfully complied with by the bee-keeper to whom it is addressed, and, in default of compliance within the time specified, the Inspector may within one month destroy or cause to be destroyed by fire, at the expense of the bee-keeper, any bees, hives, and appliances found to be infected with disease.

OFFENCES.

10. Every person is liable to a fine not exceeding five pounds who—

(*a*) Obstructs an Inspector in the exercise of his duties under this Act, or refuses to destroy, or to permit the destruction of infected bees or appliances:

(*b*) Fails to comply with any direction given under the provisions of this Act by any Inspector:

(*c*) Commits any other breach of this Act."

Now, during the period our Act has been in force (over four years), I have not heard of one single instance where any of our inspectors have been even suspected of misusing their powers, though in the interests of commercial bee-keeping in the suppression of disease, we have had to destroy as many as 25 per cent. of the bees and boxes in some districts. Is it to be supposed for one moment that a

bee-keeper with a reputation that would warrant him being appointed as an inspector, would act in a manner detrimental to individual bee-keepers? No. He is more likely to err on the side of leniency, as I have found it here. Let those then who have expressed that fear throw it aside, and accept our experience as an indication of what they may expect. —I. HOPKINS, Auckland, New Zealand.

NOTES BY THE WAY.

[8362] I was very pleased to again see a communication from Mr. A. Sharp (page 54); it is a long time since we have had the pleasure of reading anything from his pen in the pages of "B.B.J."

The question of coverings for bees, porous and non-porous, was discussed at a considerable length during the editorship of the late Mr. C. N. Abbott, and the feeling expressed by bee-keepers was that both kinds had their advantages. In the early eighties I myself used glass covers in the old "Woodbury" and Cheshire "Hayrick" style of hives, and the packing was dry wheat chaff over the body-box, with a little bridge to prevent the chaff getting to the entrance of the hives; the bees always wintered well, and came out in the spring in good condition with combs free from mouldiness or dampness. At that time our covers were mostly of wood, with bee-space over the tops of frames, and one of the chief points in favour of the carpet quilt was the ease when manipulating with which they could be rolled back to uncover the honey, to build up in the spring, or to insert an extra comb of food. At that time we had hanging frames to hold syrup, and even frames holding candy, which we hung at the back of the brood-nest. After a time I began to use the carpet quilts, and I must say, they have answered as well as the wood or glass covers, for the twenty-five years that I have used this system. I have always advocated abundance of warm wraps over the quilts throughout the year, but especially during the winter and spring, though I have known bees to do well, that is, live and thrive, located in the corner of a roof, the combs built from the rafters to the ceiling joist, and no side walls or covers of any kind to the combs. I have taken several pounds of lovely white clover-honey from this colony for the farmer owner year after year, and they generally swarmed and sent off casts, although they had unlimited space to extend their nest if they wished. With regard to Mr. Bowen's contention (8356, page 56) that sloping boards reaching from hive entrance to the ground are unnecessary, in my opinion they are helpful to the bees returning with honey sacs full; and as he contends that bee-men are mostly poor, I think any little cheap contrivance that will help to increase the income of honey, i.e., enable the bees to put an extra pound or two of honey into the "pot," would add to his income if he uses it. Any odd piece of board or the ends of a 2d. grocer's box, will make a strong alighting board. These boards also make a good playground for the young bees taking their first flight in the spring time, when the sun pops in so quickly, here they have a Jacob's ladder to reach their wished-for abode. Working, as I have, a life-time among bees, I have, in hundreds of cases, observed the utility of these wide, extended alighting-boards.

As there is no heather near, I have legs to all my hives, those who move their bees to the moors do not want them, but I certainly prefer legs to timber rests with several hives on each platform, as in manipulating one hive the next colony often gets disturbed. As regards expense, there is not much difference between the cost of wood blocks and the legs.—W. WOODLEY, Beedon, Newbury.

MISQUOTATION.

[8363] I am indebted to Mr. Dalzell for his interesting letters on glass quilts. I intend to try the experiment on a hive or two. But why do we all persist in misquoting the Apostolic writer, who did not speak of giving a reason for the "faith," but for the "hope" that is in us? (See 1 Pet. iii., 15.) As a matter of fact, it is faith rather than hope that we mean in such connections.—H. M. L., New Forest.

(*Correspondence continued on page* 66.)

HOMES OF THE HONEY-BEE.

APIARIES OF OUR READERS.

We have pleasure in presenting this week the picture of a lady's apiary, the owner of which is one among the many lady readers of "B.B.J." who make successful bee-keepers. Mrs. Thompson's account of her start in bee-keeping is told in so bright and interesting a manner that we can add nothing to make it more complete, while even the "mere man" beginner can learn something from her methods, which appear to be admirable. She writes as follows:—

I started bee-keeping four years ago with one stock which I bought from an expert bee man, who has been of great help to me and without whose advice I should not have been able to have enlarged my very humble apiary into one of sixteen hives. Last March, I had only four hives, and then, after some consideration, I determined to go in largely for bees, and

bought nine stocks, as well as a Cowan extractor, ripener, heather honey press, and a good many other indispensable things. Then I had my work cut out!

Thirteen hives to spring clean, and three coats of paint for each, but I managed the work and enjoyed it, and by the middle of May I was very proud indeed of my apiary. The weather last summer favoured me very much in my enterprise, and, with the help of a friend, I managed well. I had six swarms, and secured about 500lb. of clover honey of good quality. I have been very careful to pack it up nicely; no sticky jars, or half-cleaned sections were sent out. Also I had a die made for the tops of my honey bottles, with my name and address on it, and had special labels for all sections and bottles, besides labels for boxes of honey going by post or rail. My adviser when starting impressed on me that one of the most important features of the honey trade was to be most careful how honey was packed and sent off. I have had no difficulty so far in disposing of my produce at good prices. My greatest triumph this year was the removal of eighteen hives to the moors, a journey of forty miles. We spent all one day packing them, and most of the night, too, as, owing to some badly fitting entrances, I did not get to bed till after midnight. I have several makes of hives, and I vowed before that night was over I would never undertake a journey to the moors again without having my bees all in the same make of hive, and, if possible, one specially designed for such removal. They arrived safely at their journey's end, except one, which had rather "leaked" on the way, and I found a fair amount of bees flying about the van; it was one of the hives, by the way, I had packed with the aid of a bicycle lamp the night before.

I quite forgot all the trouble and worry when I watched scores of bees, as soon as the entrances were open, flying straight away to the heather. They did very well there, although I had to contend with five days' impenetrable sea fog in the middle of the honey flow.

At present I am having an easy time, and hope the bees are doing the same; all I can do just now is to see that my hard-working little friends are warm enough, and their hives weather-proof, as I know they have enough food for this frosty spell. My sales for honey so far have amounted to about £26, and with the honey I have still to dispose of, I think my gross receipts will be about £30. Naturally, during the first year, one has a heavy capital outlay but when all the stock is valued up at the end of twelve months, I think I shall show a fair profit for my efforts. I should be grateful if anyone could tell me of a good hive for home use and for removal to the moors; it must have ventilation in the floor board, and I should like an arrangement for securing bees in the hive. I saw one advertised in a prominent dealer's catalogue at 14s. 6d., but would like to hear if any of your readers have had personal experience of it.

MRS. CLAUDE THOMPSON'S APIARY, THE RED HOUSE, ESCRICK, YORKS.

(*Correspondence continued from page* 64.)

COTSWOLD GLEANINGS.

[8364] With regard to Mr. Crawshaw's enquiry *re* pollen in sections (page 48), I think that the locality is chiefly responsible for its unusual appearance in supers. We, on the Cotswolds, suffer from a dearth rather than a superabundance of this necessity, and are never troubled with pollen-clogged brood combs or sections. Pollen in the spring is a valuable asset, and I am convinced that the absence of an early supply is mainly responsible for the difficulty we have in building up colonies for the harvest.

As I run my apiaries chiefly for extracted honey, the production of sections does not receive much attention, but those used are all filled with full sheets of worker foundation: and both from the point of view of the salesman and consumer, sections of worker comb seem to be preferred. A large buyer of sections tells me he always prefers worker comb on account of its delicacy, even capping, and fine appearance. In order to produce the finest comb honey, it is necessary to have colonies very strong, and the bees should be induced to work in a super of shallow or deep frames before any sections are given. When a colony is working well in an extracting super (without an excluder between) and the honey flow has properly started, I remove this super and take from the brood chamber several combs of brood and honey, then fill up with frames of foundation in order to give the queen laying room.

The bees are all brushed off into the hive and a rack of sections is given, and warmly covered up. With the brood removed, I strengthen weak colonies or place it in extracting supers to coax the bees above. I endeavour to have all sections drawn out and filled during the sainfoin flow, and with this object the rack is removed when filled and the colony worked for extracted honey for the remainder of the season.

By following this plan it is possible to produce the finest sections, to a large extent prevent swarming, and I also avoid having unfinished and unsaleable sections. Whilst on this subject I may say that I believe the section of the future will be of the no-bee-way pattern. The many advantages it possesses should recommend it to all comb honey producers, and when used with a separator giving a longitudinal bee space past the section it is filled to perfection, whilst the ease with which they may be scraped and glazed is a strong point in their favour.

With regard to the proposed abolition of skeps, I imagine that some of our friends are not altogether disinterested in their wish for the passing of the skeppist, as they are doubtless hoping to pick up some good bargains. I am afraid, however, that the shrewd old skeppist of the Cotswolds knows too well the value of his bees to be either threatened or persuaded to part with them at a knock-out price. *Re* criticism of Mr. Herrod's article by "G.S.N." (page 57), I suppose we must all work in our own harness and handle the bees as our individual equipment demands, and what is practical for one may not be so for others.

I cannot see that the manipulation here practised can be much improved upon, unless it is to free the combs from bees by brushing them off, a system not without its advantages, for no arrangement is necessary for reheating the honey, so often necessary when escape boards are used; moreover, the labour of handling roofs, lifts, and supers several times in order to remove the combs, is entirely avoided. If the combs are well sealed over, a few puffs of smoke will drive most of the bees below, and as each comb is being lifted out, a shake and sweep with the brush instantly frees it of bees, ready to be placed in an empty super set aside for the purpose.

The super on the hive is then filled with empty combs, thus taking honey and supplying storage room at the same time. Before closing this article, may I quote a remark made to me by a gentleman, to the effect that he has not heard of a single case of the "Isle of Wight" disease showing itself in hilly or mountainous districts. Is there any connection between marshy and low-lying localities and the disease?—A. H. Bowen, Cheltenham.

HEATHER HONEY AS WINTER FOOD.

[8365] I noticed in the "B.B.J." of January 25th, a letter on the merits, or otherwise, of heather honey as a winter food for bees. I was quite astonished to read the opinion of a correspondent in Journal for February 1st, "T. D. N.," who says (page 47) "no winter food could well be worse," &c. This is entirely contrary to my experience, and of other successful bee-keepers in this neighbourhood. For at least ten years my bees have gone to the moors: at any rate, the best of my stocks have done so, and these are wintered entirely on their own stores of heather honey. I have, more than once noticed some stocks perilously near starvation when sent to the heather, coming home filled and sealed to the doors, and I must say I have never yet lost a stock whose destruction could be attributed in the least degree to the stores, and these same stocks are my best ones invariably the following year. Also I have never yet seen a case of dysentery in my own apiary. This difference in experience is all the more notable if your

correspondent comes from Lanark, as his district is within thirty miles or so of this locality, and the heather would be practically the same. I am afraid "T. D. N." must give us more details before he can saddle heather honey with such a label as this. Is there not another cause for his non-success in wintering? "A' hae ma doots."—A. W., Cumnock.

ROSS-SHIRE NOTES.

[8366] The sudden change from sharp frost to mild weather has given our bees an opportunity for a much-needed cleansing flight.

So far all is well, every colony flying vigorously, seemingly none the worse for last week's zero temperature. Each stock seems fairly strong in bees and blessed with abundant stores, so there will be no need of preliminary spring "management" to prepare them for the honey flow.

Last season my most forward colony, the one that gave me sealed sections about the opening days of June, got no attention whatever. In fact the sections, partly filled with honey, had been on from the previous season. A good point about this plan is that the super does duty as storehouse in early summer, so the queen has the brood-chamber to herself for brood alone. This means more brood, more bees, and more surplus honey.

Bee Paralysis.—In reply to a recent enquiry, the "Heathfield" remedy used here was the tar dummy board, but I don't suppose Mr. Simmins would consider this treatment sufficient except in mild cases of paralysis. Should the disease appear again, I mean to give the B-well remedies a full trial before proceeding to more drastic treatment.

But if extreme measures become necessary, let amputation rather than annihilation be our policy. It is well known that in the case of a stock affected with "Isle of Wight" disease, the brood remains perfectly healthy and dies only through chill as the adult bees are swept away. Theoretically, the disease should be curable by substituting a healthy population for the diseased one. Which means destroying the bees only and renewing the colony by running a natural or artificial swarm on to the beeless brood. In practice last season the scheme was successfully worked in different hands with swarms and driven bees alike.—J. M. Ellis, Ussie Valley.

GLASS QUILTS.

AN EXPLANATION.

[8367] Some time last autumn I was buying some bee appliances from a certain firm of appliance-dealers and got into conversation with their manager. I told him of the glass quilts I was using, and he asked me to show him one, which I did.

Some time later he told me his firm intended to make them commercially, and asked my consent. As there is nothing particularly novel about them, refusal would have been of no avail, as they could have made them without my consent, and I therefore told him I had no objection.

A day or two ago I got the catalogue of the firm in question, and see that they are selling "The *Dalzell* Quilt." Needless to say, I knew nothing of this when I wrote my letter to the "B.B.J.," and have no interest whatever in the sale of the quilts. —J. G. Dalzell.

[Our correspondent is quite correct, there is nothing new in glass covers, or, as they are now erroneously called, "quilts." They were used in the Woodbury hive, and are illustrated in "The Apiary," by A. Neighbour, published in 1865, on page 38. We used them ourselves in the seventies, and Mr. C. N. Abbott introduced such a cover in a hive he made in 1879 for observation purposes. Messrs. J. Burgess and Co., have also made glass covers for some years, and they were described and illustrated in the "B.B.K. Guide Book," page 209, nineteenth edition, published in 1907, and also in the last edition. These were all sheets of glass within a wooden frame, exactly as described by our correspondent, and Messrs. Burgess have also a hole in the glass-quilt and a feeding stage which fits over it. There can, therefore, be no objection to anyone making glass covers, or calling them what they like.—Eds.]

GLASS QUILTS AND SCREWDRIVERS.

[8368] I have used plate-glass as a covering on my hives for three years, and would not go back to quilts. The chance of breaking is very slight. I use thick felt on top both summer and winter. The bees can be inspected at any time without disturbance. The glass, of course, is removed when a super is put on and replaced on top of super. I had two stocks last spring, one black bees and the other hybrids; the blacks gave me 83lb. of honey in sections, the hybrids swarmed five times. I made two stocks from them, finishing the season with four strong colonies, my total take of honey being 230lb. I gave no syrup in the autumn, but put on each hive a cake of candy a few days ago. On one of my glass quilts I left the wire sieve in the hole used for feeding, with a 1in. felt quilt on top, thinking this would give ventilation, yet the bees carefully filled up all the meshes of wire with propolis; this was done last summer, so

evidently the bees prefer an impervious covering. The writer of "Helpful Hints" (p. 58) says screwdrivers are made of iron. Surely if this is the case they would bend from any force sufficient to snap a chisel. No, all screwdrivers are made of steel, excepting those in toy boxes. The round are made of steel spindles, and the flat, "London Pattern," of cast steel. I find an old bread-knife quite strong enough to separate my supers, and useful for cutting brace combs, or scraping off propolis.—J. D. A., Minehead.

RANDOM JOTTINGS.

By Chas. H. Heap.

DISINFECTION OF HIVES.

When I read the American bee journals I am often astonished at the careless and imperfect manner in which, according to descriptions, even the most progressive bee-keepers sometimes attempt to rid their apiaries of foul brood—"American" and "European." Our best bee-keepers are in advance of those of America in this respect; but this cannot be said of the average owner of bees. Comparatively few people have a thorough grip of the broad, general principles of the antiseptic treatment of disease. If they did, we should have fewer costly blunders in the apiary. The best modern works on practical apiculture indicate the road along which the bee-keeper should travel; but of necessity they cannot do more than suggest the measures to be taken to eradicate disease and to prevent its dissemination. It therefore follows that everyone who undertakes the management of bees should lose no opportunity of reading anything they may see, if it is not too technical, bearing upon bacteria and sterilisation. This is not much trouble and the knowledge obtained gives confidence in dealing with disease in the apiary and ensures success.

A Dangerous Purchase.—I am led to make these observations by seeing some hives bought a few months ago from a bee-keeper who lost all his bees from "Isle of Wight" disease. They were sold as being free from disease, and in giving this guarantee the seller was, I believe, to the best of his knowledge acting honestly. He had scorched the brood-chambers and floor-boards until they were as black as a funeral car; but in the work there was that lack of thoroughness which would remove, without the shadow of a doubt, all possibility of infection. Neither before nor during the scorching process were the hives pulled apart, and so outer cases and the exteriors were left untouched. On the exterior walls were well-defined signs of "Isle of Wight" disease. In one case section-racks were placed inside the hives, but no attempt whatever had been made to sterilise these. The use of such hives would have been pretty sure to result in disappointment, unless further precautions had been taken than the scorching of brood-chambers. The section-racks may or may not have been in use with the diseased colonies. If not, all well and good, but if they had, the work of sterilising the brood-chamber with fire, the greatest of purifiers, would be undone, as the germs of disease, so small that they require to be magnified hundreds or thousands of times before they can be detected with our eyes, would be dislodged and fall upon the charred walls and floor-board below. As we all know, dust often finds its way into what we are inclined to regard as inaccessible places. How easy then is it to imagine these minute organisms being sucked under the bottom edges of the brood-chamber walls by the slight currents of air which are constantly in circulation owing to the varying of the temperature of the hive. The distribution of disease germs in the outer case, say, of a W.B.C. hive, is but a consequence of removing quilts, frames, and dead bees. It is on account of these dangers that warnings are so frequently given in the BEE JOURNAL and *Bee-Keepers' Record* against the purchase of second-hand hives.

Thorough Disinfection.—If everyone had the requisite knowledge and would go to sufficient trouble to remove every trace of disease from them, there is no reason why sound second-hand hives should not be used. Those lacking in knowledge of bacterial life and antiseptic treatment will find it cheaper in the long run to purchase new appliances. In cases like those I have mentioned the first thing to be done is to carefully wash every part of the exterior with a strong solution of carbolic acid, or other suitable germicide, which should be allowed a little time in which to do its work of destruction. The roof should then be taken off and its interior and edges brushed over with a fresh lot of solution, the lift and outer-case of a W.B.C. being treated in the same way. The charred body-box and hive-floor should also be well brushed over with the disinfecting fluid, taking good care not to miss crevices and parts which had escaped the flame of the blow-lamp. As each part of the hive is treated it should be carried to a safe place, care having been previously taken not to allow the clothing to come in contact with unsterilised portions of the hive. Great care should also be taken to avoid placing the hands or any part of them on an unsterilised and then on a sterilised part of the hive under treatment. When the floor-board has been through the process, the various parts may be assembled and allowed to

remain out of doors until the odour of the disinfectant disappears. In work of this kind the bee-keeper must never for a moment lose sight of the old motto:—"What is worth doing at all is worth doing well."

A Correction.—In my last "jottings" I ventured to describe what I have found to be an easy method of wiring frames, but my readers must have been puzzled by my advice to give a "straight twist" with an awl (see page 8). It should have been a "straight thrust," but for reasons I will not explain the compositor has my full forgiveness.

BIOSCOPE LECTURES ON BEE-KEEPING.

CRAYFORD AND DISTRICT B.K.A.

The third winter meeting of this association was held on February 7th (the president, S. R. Keyes, Esq., in the chair), in the Y.M.C.A. Hall, at Dartford, in conjunction with the Education Department of the Dartford Co-operative Society, when Mr. J. C. Bee-Mason, the well-known apiculturist and Cinematographer, gave a lecture on "My Bee-hunting Experiences," illustrated by lantern slides taken from some of his celebrated films. The lecturer pointed out the differences between a hive as made by the bees and that provided for them by man, mentioning that during the whole of his experiences he had never found any disease in a self-established colony, if it had been established for a reasonable time—sufficient for it to have cured itself if it was a swarm from a diseased hive. He also dealt at some length on the "Isle of Wight" disease, and gave his theories as to its causes, promoting much discussion amongst his audience. At the close, the lecturer was cordially thanked for his address, which had proved so original and interesting.—(*Communicated.*)

L. AND N.W. LITERARY SOCIETY.

Mr. J. C. Bee-Mason addressed a large audience numbering some five hundred members and friends of the London and North-Western Railway Literary Society at the Large Hall at Euston Station, on January 30th. He showed a great number of interesting pictures illustrating the taking of bees from a hollow tree and other strange domiciles, the "Production of Honey," and the "Birth of the Queen," the latter being a remarkable series, showing the inmost recesses of the home of the bee people. The pictures were received with delighted interest, and Mr. Mason's explanatory address was listened to with keen and appreciative attention, a cordial vote of thanks being passed at the close to the lecturer.

Queries and Replies.

[8283] *Queens and Swarms.*—Will you be so good as to answer me the following questions?:—(1) I was under the impression that when a queen left a hive with a swarm there was no other queen in that hive, but a number of queen-cells, one of which was ready to be hatched out in a day or two. I find, however, that it is not an uncommon thing for two swarms to issue simultaneously. Does this happen only with casts? (2) If there is a queen left in the hive when the swarm has issued, is she a virgin or a fertilised queen? If the latter, how can fertilisation take place if a Brice, or other swarm-catcher, be used? (3) Is there any difference between the progeny of a (1) laying worker, (2) a virgin, or (3) the unfertilised egg of a fertile queen? As regards their power to carry on the race, should one meet in his travels a queen on her first flight I am asked to believe that neither the drones hatched from eggs of the laying worker nor the virgin queen possess the power of reproduction? (4) Has a swarm ever been known to issue headed only by a virgin, and fertilisation take place at a later date? I find the BRITISH BEE JOURNAL a mine of interesting things.—T.P., Ipswich.

REPLY.—(1) When a swarm issues, there is, as a rule, a queen-cell containing an embryo queen that will emerge in about three days. It is impossible for two swarms to issue simultaneously from the same hive. A cast may come from a hive that has swarmed, but this occurs about nine days after it has swarmed. (2) The queen, which emerges is a virgin, also usually the queen with a cast is a virgin also. After a swarm has been caught with the Brice swarm-catcher, it is useless to leave it on; it should be removed, otherwise the virgin cannot take her marriage flight. (3) No matter from which kind of mother the drone is produced he is capable of perpetuating the species. (4) This happens repeatedly with casts.

[8284] *Bees and Fertilisation of Fruit.*—I shall be glad if you will kindly answer a few questions, the answers to which are of importance for the fruit experiments we are carrying on here. (1) Is anything definitely known about the working radius of a bee? If apple trees of one kind are grown here, and there are apple trees, say, half a mile or a quarter of a mile off of a different kind, would they probably be visited by the same bee? (2) If there is an orchard full of trees near the bees where they have plenty to do, would they be likely to visit at the same period another orchard further off, and thus effect fertilisation? (3) This question

depends on the other two, and deals with what is really the longest flight of a bee, so that one could judge what would be the danger of getting one's apples fertilised from orchards a very long way off.—T. W. D., Merton.

REPLY.—(1) Bees work within a radius of two miles. (2) Yes. (3) It is not wise to trust to fertilisation by bees more than two miles away. The nearer the bees are kept to the orchard the better, so that in changeable weather, when the bees have a chance to fly, perhaps for only an hour per day, they may reach the blossoms at once.

Notices to Correspondents.

EAST LINCOLN.—*Expert's Examinations.*—(1) If you know the practical work, all that is necessary for the third-class examination is to thoroughly study the "Guide Book." (2) For the second-class certificate you should study "The Honey Bee," "A.B.C. and X.Y.Z. of Bee Culture," "Waxcraft," "Queen-rearing in England," and any other good book on the subject.

TILIA (Ripon).—*Spring Stimulation.*—No. If the bees have sufficient stores, you can stimulate by bruising the cappings covering the sealed food, at the proper time.

EROS (Coventry).—*Moving an Apiary.*—The best plan when moving a number of stocks is to hire a truck, and send them per goods train. At this time of the year they would travel without risk in this way if packed properly. Care should be taken that the hives are so placed that they cannot shift with the shunting which goods trains are subjected to, and also that the combs run parallel to the engine (*i.e.*, that they travel with ends pointing to the engine) so that the shaking cannot break them off.

Suspected Disease.

J. S. (Taunton).—The bees are badly constipated, and there are other outward signs which point to "Isle of Wight" disease. Send a few bees alive to Dr. Malden, Medical Schools, Cambridge, for further confirmation of your suspicions.

J. H. W. (Woolton).—Your first communication did not reach us, otherwise you would have had an answer. (1) It appears to be a case of "Isle of Wight" disease. See reply to J. S. (2) It is too long ago for you to make a successful claim.

E. M. JONES.—The bees were crushed flat in the post, so we could not examine them.

J. J. (Cowbridge).—(1) We cannot discover any disease. (2) The bees are not diseased so far as we can see. (3) They are ordinary British bees.

G. A. (Sussex).—The bees show every outward sign of "Isle of Wight" disease.

R. E. F. (Godalming).—Bees are affected with "Isle of Wight" disease. Destroy all the combs, &c., at once, and thoroughly disinfect. The honey in the sections is not injurious to human beings, but there is always risk of infecting other bees.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½ *in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

30 HIVES FOR SALE, guaranteed healthy and sound, 5s. each; for quantity, less; can be seen 3, Gladstone Cottages, Norwood Green, Southall.—For particulars, apply to P. HANSEN, gardener and bee expert, 59 Castlebar-road, Ealing, Middlesex. s 67

PURE English Hampshire Honey, bottles and sections.—D. H. DURRANT, New Eden Apiary, Petersfield. Established 1884. s 66

FOR SALE, Bee Books.—British Bee Journals, 1890, 1891, 1892, 1893, bound in red cloth; ditto, 1888, 1889, dark brown; pamphlets: Essay on Bees, by Pan; Bee Culture, by Newman; Bee-Keeping for Profit, Dr. G. L. Tinker; How to Raise Comb Honey, Foster, illustrated; Simmins's Method of Direct Introduction; Production of Comb Honey, Hutchinson; Wintering Bees, Cowan; Chemistry of the Hive, Hehner; County Associations, by Rev. H. R. Peel 25s., or nearest offer.—D. H. DURRANT, New Eden Apiary, Petersfield.

FOR SALE, finest light Cambridgeshire Honey, clover and sainfoin, warranted pure, in screw cap jars, 14lb. and 28lb. tins, price according to quantity taken.—A. SHARP, The Dene, Lillington, Royston, Cambs.

FOR SALE, quantity granulated Honey, in 16oz. screw cap glass jars.—WILLIAM WILLIAMS, Overton, Ellesmere. s 53

4 1912 straw Skeps of Bees, price 12s. each.—J. WAYMAN, Cottenham, Cambridge. s 65

FOR SALE or EXCHANGE, beautiful wolf sable bitch Pomeranian, good mother, splendid pedigree; would exchange Bees, light run or comb Honey, 3 frame Observatory Hive.—C. P. MAYNARD, 175, High-street, Guildford. s 64

CHAPMAN'S HONEY PLANT, Limnanthes Douglassii, borage, seeds, really good packets, 4d., 3 8d., 6 1s. 1d., free.—REV. ANDERSON, Northam, North Devon. s 62

HALL LAMP, paraffin, nearly new, cost 15s., exchange, with cash, for Swarm.—"BLACKS," "B.B.J." Office, 23, Bedford-street, Strand, W.C. s 61

HIVES, Lee's, W.B.C., and Improved Holborn, for sale; also others, and sundries, cheap.—R. CARTER, Chartridge, Chesham, Bucks. s 60

LIMNANTHES DOUGLASSII, splendid honey plants for bees, strong plants, 100 1/-.—TOWN, Kingston Gardens, Abingdon, Berks. s 50

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, 15th Feb, 1912, at 23, Bedford Street, Strand, London, W.C., when Mr. W. F. Reid presided. There were also present: Miss Gayton, Messrs. E. Watson, J. N. Smallwood, T. Bevan, J. B. Lamb, R. Andrews, and C. M. Eales (Affiliated Association Delegates), G. R. Alder (Essex), G. W. Judge and J. E. Smiles (Crayford), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Miss K. M. Hall, Messrs. T. W. Cowan, O. R. Frankenstein, E. Walker, A. G. Pugh, J. N. Kidd, Col. H. J. O. Walker, Capt. Sitwell, Gen. Sir Stanley Edwardes, Dr. T. S. Elliot, and Rev. A. D. Downes Shaw.

The minutes of Council Meeting held 18th Jan., were read and confirmed.

The following new members were elected: Mr. F. W. Harper, 51, James Road, Watford; Mr. T. J. Short, Garden Walk, Cambridge; Dr. T. D. Newbigging, Abington, Lanarkshire; Mr. R. W. Furse, Woodbury, R.S.O., Devon; Mr. J. S. Dunbar, Craigellachie; Mr. B. Blackbourne, Hoo Minster, Ramsgate.

The following names of delegates to the Council meetings were submitted and accepted: R. W. Furse (Devon), Rev. G. W. Turner (Herefordshire), A. Willmott (Hertford and Ware), A. R. Moreton (Worcestershire), G. W. Judge (Crayford), and G. J. Buller (Hitchin).

The report of the Finance Committee was presented by Mr. J. N. Smallwood. The balance in hand at the end of January was £142 5s. 7d. and payment of £1 18s. 6d. was recommended.

The dates for the paper work for the First Class examination were fixed for 24th and 25th May.

The draft of the annual report was considered and passed with amendments.

Mr. W. F. Reid and the Secretary reported upon the work of the Development Grant Committee to date, and it was resolved that the Council approve of the action of the Committee.

REVIEWS.

Honey Plants of California, by M. C. Richter (published by the University of California, Berkeley).—This is bulletin No. 217, issued by the Agricultural Experiment Station, Berkeley, California. The bulletin gives an account of that flora in California which is visited by the honey bee for the purpose of gathering nectar or other sweetish material, as well as pollen and propolis. It is a result of the compilation of all the fragmentary literature obtainable upon the subject, as also of field work in different parts of the State during the past four years. The account of each plant gives in a condensed form all information that tends to help the bee-keeper in ascertaining its value as a honey plant, and the photographic illustrations, although very small, will help him to recognise it. Atmospheric conditions play an important part in the quantity of nectar secreted by different plants, and a good honey plant in one locality may prove worthless as such in another. A difference in California of only a mile may show a marked change in the nectar-secreting powers of some plants. Colour, aroma, and granulating properties of honeys are likewise influenced by climatic conditions as well as by altitude, the character of the soil and its moisture content. The bulletin contains a relief map of California, showing the honey regions. There being every variety of climate in California, from the heat of the tropics to the cold of the mountain regions, it is not surprising to find such a long list of flowers yielding nectar. Many of the plants which are found growing wild are easily cultivated in our gardens. Among these some of the best are: *Phacelia tenacetifolia*, *Cleome integrifolia*, *Medicago sativa*, *Melilotus alba*, *Limnanthes douglasii*, *Solidago occidentalis*, *Ribes sanguineum*. There are forty-six pages and a chart of honey plants divided into groups, showing those that yield a surplus during an average season, those occasionally giving a surplus, and those which bees frequent during unfavourable seasons or when nectar-producing plants are scarce, and do not generally secrete sufficient for bees to store.

Fifty Years Among the Bees, by Dr. C. C. Miller (published by the A. I. Root Co., Medina, Ohio, U.S.A., price $1 or 4s. 2d.). This is a revised and enlarged edition of *Forty Years Among the Bees*, by this veteran bee-keeper, who has for many years been prominent amongst writers, and is the associate editor of the *American Bee Journal*. The first few pages are taken up with an autobiography of Dr. Miller, in which we learn something of his early years, his college life, and how he worked his way on a very small sum equivalent to 1s. 5d. a week; how he further studied and practised medicine, regarding which, he says, it did not take him more than a year to find out that he had not sufficient stock of health himself to care for that of others, especially as he was morbidly anxious lest some lack of judgment on his part should prove a serious matter with some under his care. He therefore gave up the medical profession and in 1861 took to his first bees. The author gives his experience with bees,

the discouragements he encountered and the way he overcame the difficulties. One winter he lost ninety-five colonies out of 162 that had been put into the cellar. With the sixty-seven colonies left he took 7884lb. of comb honey and increased to 177 colonies. This was an encouragement and made up for the loss of the previous winter. There are no chapters as in ordinary books, but it is more like a pleasantly-written story which describes the interest and love of the subject which have marked the success of the author after overcoming innumerable difficulties during the fifty years that he has kept bees. Under every heading is found some useful idea, and Dr. Miller describes in plain language just what he does in his own apiary and how he does it. The book is full of good things from cover to cover and we recommend every bee-keeper to get it, and feel sure all will be repaid if they read it from beginning to end, for it contains the practical experience of one who has not only been a successful bee-keeper but also a careful observer for fifty years.

HELPFUL HINTS FOR NOVICES.

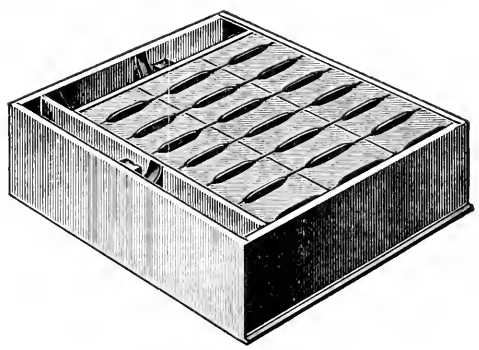
By W. Herrod.

PROCURING SURPLUS

(*Continued from page 54.*)

Let us next consider the section-rack. Various forms are in use, some of them not at all convenient to work, in fact in a great many instances they are only tolerated on account of the expense that would be entailed in replacing them. The day of the three-piece rack is past, though these had the advantage of enabling the bee-keeper to give extra room more gradually by placing seven sections only in position at one time. The disadvantages, however, were so numerous that they have fallen out of use altogether, and it is exceptional to find them in the catalogues of the manufacturers. The racks made and sold by some dealers, having one end cut out half-way with a wedge-shaped piece of wood to be used for tightening up the sections, should be avoided. In such racks it is usual to tack a piece of coloured stair-carpet to the whole end and also to the top of the wedge piece, the idea being, I suppose, to prevent the loss of the latter. In the first place it is difficult to fasten the sections securely by means of the wedge; secondly, if not made to fit very accurately the bees escape through the joint at the end of the wedge into the roof portion of the hive where hundreds of them perish. In such cases it is no unusual thing to find the top and sides of the rack covered to a depth of a couple of inches with dead bees; it is curious that when bees escape through such small openings they seem incapable of finding their way back. Further, the use of the coloured material is a mistake, for the bees often chew this up and mix the fluff with the cappings of the comb, giving the sections the appearance of Joseph's "coat of many colours," and spoiling them for selling. Good, clean calico should be placed next the supers, and this should be unbleached, for if bleached calico is used, the flavour of the dressing seems to attract the bees and they chew it up. Quilts should be renewed once each year, and the time I like to do this is when putting on first super. Personally, I do not like a rack that is made just $12\frac{3}{4}$in. wide, my reason being that it is very difficult to work it in conjunction with a shallow frame super on the same hive.

The super-rack par excellence is that shown in illustration, brought out by Messrs. James Lee and Son some years ago. This fulfils all the requirements of a good rack; it is made the same width and length as the brood-chamber and when placed in position on the hive fits right over the frames and prevents the escape of the bees with-



LEE'S SECTION RACK.

out the trouble of putting at one or both sides narrow strips of calico. It also prevents all possible chance of draughts, which, if allowed, will effectually prevent the bees taking to the super. Section-racks must fit closely and be wrapped up warmly to ensure good work. The extra width in the rack referred to above is blocked at the bottom with a thin board, and the sections are kept in position by means of a following board and spring-block both at the side and end. With such a rack, trouble is reduced to a minimum, as it can be worked either above or below a shallow frame super without the slightest trouble; if the narrow rack is used it is utterly impossible to work the shallow frames above it.

We should also pay attention to the girders which carry the sections; these should be of wood about $\frac{7}{8}$in. wide, and not the metal T-shaped girders so often

used. In the first place wood is warmer than metal; in the second place the tail of the T standing up between the rows of sections prevents them fitting closely together, providing a space wherein the bees place any amount of propolis; a waste of time on their part, and a cause of much trouble and waste of time in cleaning. Then, by being separated slightly, *i.e.*, about $\frac{1}{8}$in., the sections often get out of the square and further trouble ensues when they are glazed. In the narrow racks with metal girders it is difficult to remove the sections, and if the rack is turned upside down, and an attempt made to force out the sections with the fingers, well, often several good sections are smashed in the process. With the wooden slats and wide rack all this is avoided. There is no ridge to hold the sections apart, and the side following board forces them absolutely square, the removal is easily accomplished by taking away the side and end board; a strong knife pushed in between easily separates them with a side movement.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEE-KEEPING IN NEW ZEALAND.

[8369] I shall deem it a very great favour if you will allow me to reply in a general way through the medium of your widely-read JOURNAL to the very many English correspondents who have done me the honour of applying to me for information *re* bee-keeping in New Zealand, with the view of coming here to take it up. I exceedingly regret that I have been unable, through my time being fully occupied, to reply personally to my correspondents. I feel that many must have considered it an act of discourtesy on my part not to have done so, but I can assure them that the compulsory omission has given me much concern, and I trust they will accept my apology.

To young men and women who already have some knowledge of bee-keeping, and who have an idea of coming to this part of the world, I would say there is plenty of scope for commercial bee-keeping in many parts of New Zealand, yet unoccupied by bee-keepers. So far as the climate, flora, rainfall, &c., are concerned, I believe it to be one of the best countries known at present for this business. The quality of most of our honey is, without doubt, equal to the finest produced in any part of the world. Though the present season promises to be a very poor one—exceptionally so, for New Zealand—we rarely have a generally bad one; they are, as a rule, even and good. The yields of honey may not be so phenomenal, as is the case occasionally in California for instance, but we are free from the famine seasons the Californian bee-keepers so often experience. There are plenty of bee-keepers doing well here, whose sole occupation is commercial bee-keeping, and that I think is the best evidence I can bring forward as to the progress of the industry in New Zealand, and it must not be forgotten that we have the best bee disease legislation of any country in the world at present.

Now for a little personal advice. Let no one come to New Zealand with the object of going into commercial bee-keeping, with the idea that they are going to have an easy time of it, and that they will rapidly make a fortune. To engage solely in bee-keeping on a scale which would promise a competency at some time, means hard work, close application, skill, and some commercial ability. Being possessed of these qualifications, and an intense love for the work, there is no rural occupation here which affords such good opportunities and a more contented life, to the person of small means with good hands and head than commercial bee-keeping. Should any further information be required and if the Editor will allow the inquiries to be made through the "B.B.J.," I will reply through the same medium. I may add that by making application to "The Secretary of Agriculture, Wellington, New Zealand," for a copy of "Bulletin No. 18 on Bee Culture," inquirers will get full information on bee-keeping in this colony. —I. HOPKINS, Auckland, New Zealand.

COMMENTS ON CURRENT TOPICS.

SECTIONS.

[8370] I notice in "B.B.J." of Feb. 8th (page 53), that Mr. Herrod is inclined to condemn the 4in. by 5in. by $1\frac{3}{8}$in. or "tall" sections, instancing several disadvantages they possess. Certainly they are rather narrow, and will not stand quite so firmly as the 2in. section, but this is not a fault which militates greatly against their use, as I hope to conclusively show. They require a different-sized glass, of course, but that is immaterial, as a glass-cutter will just as easily cut a thousand 5in. by 4in. as the same number of

4¼in. squares. That they are more quickly filled and sealed than the 2in. sections is, I think, certain; for the reason that *thin* combs—other conditions being equal—yield thicker honey than *thick* ones, and this is tantamount to saying that the thinner comb is ready for sealing sooner. The late Mr. W. B. Carr was well aware of this, and expressed this opinion in the "B.B.J." some 20 years ago, about the time when the wide "W.B.C." ends were introduced.

My own experience with "tall" sections last year has induced me to order a thousand for the coming season, although I already have some five hundred in stock. I despatched a few hundreds last season to one of my oldest wholesale customers, without saying one word in their favour; simply invoicing so many "tall," so many "square," and so late as the end of January he wrote me offering to buy my whole crop next season, and requesting, "if convenient," *that the bulk of the sections should be "tall" ones.* Nor is he a buyer of a few dozen only—my apiary alone supplied him with about a ton of honey last season, chiefly sections. Here, you see, the tall sections have made their way entirely on their merits, and have gone right over the heads of the 4¼in. "square," with which I had hitherto supplied him. All the theoretical faults specified are as nothing compared with a practical experience like this.

Plain, or No-bee-way Sections.—I think these have some decided advantages over the ordinary 2-way, viz.: they are easier to scrape and to glaze, and look better *when* glazed. But 1⅛in. is too wide for a plain section 4¼in. square, as when well filled this would weigh about 18oz. About 1⅝in. is more like the width required. 1⅛in. is about right for the 2-way section.

I was amused a few years ago on reading the statement of one or two bee-keepers whose apiaries appeared in the "B.B.J." to the effect that they never sold any section weighing less than 16oz., which I thought a most foolish resolution to make, in view of the fact that we not seldom have seasons when most of the few sections we get sealed weigh from 12oz. to 14oz. only. Take the year 1910, for instance. My bees gave me that year the grand total of 210 sealed sections, every one of which was sold, every one being weighed, with the result that only *one* section of the lot scaled 16oz.! So that our friends before-mentioned, adhering to their plan, would, in my situation, have disposed of just one section! Personally, I am glad to say I have a market for every decently sealed section weighing 12oz. and upwards: and I know it will pay me a good deal better to sell those 12oz. to 13oz. sections at a proportionate price than to extract the honey and keep the combs till next season. Mr. Herrod's objection to the sale of light-weight sections is that they will fail to give satisfaction in the long run; but I have sold the gentleman mentioned above many hundreds of sections ranging between 12oz. and 14oz., and still he clamours—like Oliver Twist—for more.

Philosophy of Hive-shape.—The shape of the comb in the 5in. by 4in. section is similar to that which the bees build naturally when hived for a few days in an empty box or skep. These pieces are purse-shaped, that is, deeper than they are wide. Now this illustrates the best shape of combs (and hive) for perfect wintering. The perfectly shaped domicile for a winter nest for bees is found in the tall, dome-topped straw skep of the German "heath" bee-keepers; the combs being attached to the walls of the hive for a considerable proportion of their depth. No frame-hive with open-ended, rectangular frames can equal this for the wintering of bees; and the long, shallow type, such as the Langstroth and British frame hive least of all.

The size and shape of frame advocated more than thirty years ago by Mrs. E. S. Tupper—then well-known in the United States as a remarkably able bee-keeper—viz., 12in. wide by 14in. deep, comes nearest to any frame I know of for securing the maximum comfort and convenience to the bees, summer or winter.

There is room upwards in these frames to store an ample supply of food for winter and spring consumption, while allowing the bees some empty cells below for compact clustering. Moreover, as Mrs. Tupper says, the heat from the cluster ascends more "compactly" in this form of hive and warms the honey overhead, the bees gradually eating their way upwards and thus increasing the number of empty cells to cluster in during the remainder of the winter, while at the same time making room for a nice brood-nest in spring. This conservation and "compacting" of the heat is not nearly so well accomplished in the long, shallow hive. The chief objection bee-keepers have to the deep frames, is, I think, that they fear the bees will store too much of their honey in the frames at the cost of that in the supers. No doubt the present type of hive has many conveniences for the bee-*keeper*, but for the *bees* a worse shape could not well be devised.

Locality, the Man, or the Hive.—I agree with our South African friend, Mr. H. Martin (page 56), that abundant bee-flora and suitable weather are *the* absolutely indispensable conditions for a good honey-crop; for both man and hive are useless *without* those conditions.

Foul Brood Legislation.—I was pleased

to see a letter from your old-time contributor, Mr. Allen Sharp (page 54). I consider this one of the best and most logical articles on the above subject that I have read in the BEE JOURNAL. I was especially pleased to see the way in which he smashed the idea that diseased hives are and must be worthless, and therefore compensation for such stocks a superfluity. Now, I would not like to avow at this present moment that any single stock in my apiary is absolutely free from disease, yet those same bees, or their progenitors, produced last season an average surplus of about 60lb. per hive, chiefly comb-honey, and, with similar weather I have no doubt they will do as well in the coming summer. It looks, therefore, as though *I* should want some compensation if they were destroyed.—S. P. SOAL, Rochford.

THE SKEPPIST BEE-KEEPER.

[8371] My remarks on the abolition of the straw skep (page 24) have not escaped notice by your readers, and I am pleased that they have drawn some observations on the subject from "D. M. M.," who writes as one having authority. I did not intend to convey the idea that I was in favour of its retention for general use, but that I was *not* in favour of its abolition by Act of Parliament. By all means let us educate the prospective bee-keeper in the use of the frame-hive, pointing out the great advantages to be derived from it in comparison with the skep. With regard to the financial aspect of the question "D. M. M." does not notice the actual point I wished to convey. Many rural bee-keepers have been initiated into the craft through becoming accidental possessors of a stray swarm which they have secured by purchasing a 2s. skep, and in many instances have either borrowed or begged this receptacle from a friendly neighbour. Then, when the bee-fever has got well hold of them, they have launched out into the purchase of a frame-hive and further hives have followed from the resultant profits. These are the most enthusiastic members of the craft and are to be congratulated on their enthusiasm. I could show "D. M. M." more frame-hives reeking with foul brood in one day than he could probably find skeps in one week. I know of many more objectionable sights than an old world garden, merry with the hum of the bees that are housed in the old-fashioned skep.—R.N.C., Lincs.

NON-POROUS v. ABSORBENT QUILTS.

[8372] In answer to Mr. Bowen (page 55), as I have pointed out in my letter on the same page, the cost is not very excessive if one considers the long life of the glass quilt. I have had seven in constant use for the past three years, and have never broken one. Indeed it seems to me that the risk of breakage is no greater than that of the glass in one's windows. 21oz. glass is nearly $\frac{1}{8}$in. thick and will stand a lot of knocking about when in a frame, and will easily bear the weight of the largest Canadian feeder. The bees do not propolise it down firmly, but at the most only very slightly. I tack a piece of tape, 3in. long, in the centre of two sides, sufficiently loose for the fingers to be inserted, and this enables me to lift the quilt off quite easily when necessary.

Replying to Mr. Wedmore, may I say that the glass is 15$\frac{1}{2}$in. by 15in., each side entering $\frac{1}{4}$in. into a groove in the frame. The latter is 1in. wide, $\frac{1}{2}$in. thick, with a groove $\frac{1}{4}$in. deep and $\frac{1}{8}$in. wide, run $\frac{1}{4}$in. from one side of the frame, thus leaving $\frac{1}{8}$in. of the wood above the glass, and $\frac{1}{4}$in. below. The frame is 17in. by 16$\frac{1}{4}$in. and comfortably covers ten frames. When I wish to contract the brood-nest I tack a narrow piece of felt, $\frac{1}{4}$in. thick, on the dummy on each side—the exact length of the glass. This prevents the bees passing. I use the quilt always, even with supers. My bees do not seem to resent the removal of the felt quilts and the consequent sudden exposure to light. I fear coloured glass would be much too costly, but Mr. Bowen could effect his purpose by covering the top of the glass with a coating of aniline red dissolved in collodion. I have done this for photographic purposes.—J. G. DALZELL.

BEES IN THE WESTERN ISLES.

[8373] In a recent issue of "B.B.J." "D.M.M." writes: "I was under the impression that bees, or their produce, were known little, if at all, in our Western Isles. Some Hebridean apiarian might inform us what degree of success attends the pursuit in these windswept isles, apart from Stornoway." In the first place I have to thank Mr. Macdonald for the implied compliment to the Nicolson Apiary, and, secondly, I have much pleasure in informing him that bee-culture has been a success in the Hebrides wherever it has received anything like a fair trial. A bee-keeper in Skye told me just the other day that he had tried poultry, sheep-farming, had kept a cow, and had given considerable attention to gardening; but nothing had given him such a return as bee-keeping for the time and money expended. I took 70lb. of surplus in 1910 from a swarm that I placed out in the country. A lady in the far glen of Valtos had 20lb. section-honey from a late swarm last year, and my friend, Mr. MacIver, at Bayble, had 150lb. from five

stocks. Both of these are "new beginners." We had much honey to sell, but the local demand was so great that one enterprising grocer imported honey from the Mainland—it was not from Banffshire. His customers complained bitterly that this new honey was not nearly so good as the Lewis honey.

Others apparently succeed where Triptolimus Yellowley failed so ignominiously. In the town of Stromness a lady who had just started bee-keeping took fifty-four sections from one stock last season. For beginners I think we are doing fairly well. —J. ANDERSON, Stornoway.

BEE-KEEPERS AND LEGISLATION.

[8374] With regard to the letter of G. M., Northants, in "B.B.J.," Jan. 25, p. 37, in which he says that I differ from Mr. Herrod in saying that "the extent of a man's apiary is no test of his ability to manage the same," may I say that that is not the impression I wished to convey? I merely said in my letter "It is quite possible, though improbable, that this type of man (the man who does not know when his bees are diseased) may keep a large number of stocks." In this, I think, Mr. Herrod will agree. I also said that "the size of the apiary is no real guarantee" of qualification of the owner to deal with diseases. At any rate, I think it would be impossible to get Parliament to pass a law exempting the owner of large apiaries on the pretext that, because he has, say, thirty or forty stocks, he must consequently understand diseases. We are apt to forget that foul brood is not the only disease which attacks bees. Of course, I should like it to be understood that I quite agree with Mr. Herrod, as I should think everyone must, that the large bee-keepers, as a body, can be trusted to deal with disease, but the question is not that, but how to frame a law to deal with disease.

I should like to say, in conclusion, that I have driven many scores of skeps in this neighbourhood during the last five or six years, and have examined a great many frame hives beside my own, and, although I have seen many cases of foul brood, only one of these was in a skep, and that a colony of very long standing. —R. B. MANLEY.

[8375] I intended to withhold any comment or criticism until the British Bee-keepers' Association published their draft of the much-discussed "Bee Bill," but as there seems so much diversity of opinion as to the usefulness of the measure, a minor comment may not be out of place at this stage. The main grounds for contention seem to be:—

1. Who shall be compulsorily inspected?
2. Who shall be exempted?
3. What shall be the grounds for allowing exemption?
4. Why shall anyone be exempted?
5. Shall the straw skep be totally abolished?

Without preliminary remarks I venture (basing my remarks on a somewhat extended and varied experience) to propose dealing with Nos. 1 to 4 collectively in a few sentences. In my opinion *all* apiaries, exclusive of size, should be examined by an inspector annually, between May 1st and September 30th inclusive, except those whose owners *and* managers hold a second-class certificate, granted by the B.B.K.A., in which case an examination should take place *only once in every three years*. In the latter case they would be persons who possess a general and scientific knowledge of bee disease in all its forms, and without doubt, would detect and cure any complaint which might make its appearance or destroy the stock as the case might be, but a triennial inspection would place them like Cæsar's wife "above suspicion."

As to No. 5, I feel fully convinced that the skep is the main root of the evil, very often a breeding ground of disease and a standing danger of infection. Where bees in skeps would be certified by an inspector to be *free* from any signs of disease, I would suggest that notice be given to owners to transfer the bees into a frame hive within twelve months from date of inspection. Failing compliance then compulsory destruction. All skeps showing on examination any signs of contagious disease to be at once totally consumed by fire—skep, comb, stand, covering, and everything in contact—and the ground freely sprinkled with quick lime for a radius of 12ft.

I quite concur with Mr. Tickner Edwardes' proposal to abolish the straw skep (and any other receptacle not a frame-hive) and I feel sure that were it not for a certain amount of sentiment that it seems to carry—a sort of last link between the old order and the new—no up-to-date bee-keeper would think of allowing bees to remain therein longer than was necessary to hive or drive.

Away from the towns (except in a few cases) there is a decided clinging to the skeps, and singularly, the expense of wooden frame-hives is usually only a secondary consideration.

From time to time in the rural districts I hear in casual conversation of another "bee-keeper," usually some elderly person; my pulse begins to quicken, pictures of an expansive and growing industry pass through my mind, visions of the cottager raising another barrier between his door and the "wolf" and swift dreams of my friend having found the new kingdoms of

plant life and insect life, which the "craft" opens up to its students. Alas! too often my brightest optimism withers as swiftly as it has grown, and lasts only in proportion to the number of yards we happen to be distant from the bees.

Frequently, *en route* to the "apiary," the cause of my temporary ecstasy relates how his father and grandfather have kept bees for almost a century, and rarely fails to strongly hint that there is little belonging to bees which is beyond his ken, for during the greater part of his life he has been a "bee-keeper" (bee-keeper indeed! what an abuse of the term!). Eventually, I am shown the "apiary" and what do I find? A few, but sometimes as many as a dozen filthy-looking, dilapidated skeps covered with decaying and often mouldy rags, and on the top of each is usually an old tin or broken earthenware bowl, the whole resting on an equally old and filthy "stand." The very first glance fills one with pity for the poor struggling toilers in their homes of dilapidation and neglect, but how much keener the pang when, after using a little gentle persuasion, one is permitted to peep into the interior. Alas! what does one too often find? Not vigour, health, comfort, and cleanliness, but weakness, misery, damp, mycelium of fungi growing on the comb, disease, death, and countless bacteria ready to be disseminated north, south, east and west.

I trust the B.B.K.A. will publish a full text of the proposed Bill in both the "B.B.J." and RECORD, and invite discussion for a limited period, say, two or three weeks (considering, of course, criticisms and suggestions for what they are worth). Whilst agreeing that the committee in whose hands the Bill is being moulded, is composed of some of our first bee-masters, it is well not to lose sight of the old axiom: "Two heads are better than one."

It is agreed by our eminent lawyers and often said—metaphorically, of course—that a carriage and pair can be driven through most Acts of Parliament. It therefore behoves all right-thinking bee-keepers to have at once a perfect measure, hence my plea for a common-sense, careful and full discussion, both pro and con, so that when the Bill is introduced into Parliament it will be so clear and concise that it will emerge unmutilated, and bring into sight the end all advanced bee-keepers wish to attain.—J.J., Stafford.

[8376] I should like to write a few lines on the proposed Bill, which, like "others," seems to please no one, although we are constantly being told "they are for our good." I think "G.M.'s" (page 37) notes on the subject very apropos, my idea being, if such an Act is needful, that it should be worked wholly or partly through the B.B.K.A. and its affiliated Branches. In this way each county should appoint experts (with B.B.K.A. approval), and where no affiliated association exists B.B.K.A. should appoint them. Each expert should have power to visit all bee-keepers, members or not, at a suitable time, and examine all hives and bees. He should have a report stating "free from disease" or otherwise. A report of the condition of bees in his district should be also sent to headquarters (B.B.K.A.). If any slightly diseased and curable stocks are found he should leave instructions as to how to treat them for a period. When that time had expired he should re-examine them, and if he found considerable improvement in their condition continue the treatment. If disease were increasing he should be empowered to destroy the stocks or report to B.B.K.A., and they order its destruction. In cases of obstinacy or neglect, the B.B.K.A. could at once take further action if necessary. I do not believe in the abolition of the skep (though I use none myself except for taking swarms, &c.). Our forefathers used it entirely, and I do not think there was any more disease then than there is now—if so much. Neither do I think that a man with an apiary of 100 or 200 hives is more free from disease than one who keeps just a few stocks and looks after them. If favour or exemption were given to the big apiaries it would do away with all small owners, instead of encouraging them, as most of our experts and lecturers do.—E. M., Bucks.

TOO MUCH WARMTH IN WINTER.

[8377] A correspondent in last week's BEE JOURNAL (No. 8351, p. 45) has had the courage to voice what has always been my opinion: that one can "coddle up" bees until they become like hothouse plants, and in consequence, when severe weather arrives, they are unable to stand it. I always allow mine to keep all they have stored in the brood-chamber, cover them up dry at the end of September, and as they use up the centre comb of stores I shift the full ones in and put the empty ones outside. I used to remove four frames, put in dummy boards, and pack the sides. I have, however, come to the conclusion that the space of six frames is so small that breathing in the confined area causes them to become unhealthy. On one occasion I bought some bees at an auction sale, which had been in an old, hard wood box for years. They had seventeen combs 15½in. long, and about 9½in. deep, full of honey. I took them home (it was in January), intending

to remove them early in the spring into an up-to-date hive; early in March I found they had a lot of brood. On May 14th I had a fine swarm, and afterwards a good cast, which I kept through the next winter. I am not sure I should have transferred them in August, but the old box was broken, and the bees went in at three or four places; the box was only covered up with an old potato sack when I bought it. This seems to prove to me that good, dry houses, with plenty of air space, will ensure healthy bees. I know this is contrary to the advice given by authorities who write our books on bees, but it is my experience for the past ten years, and I have only lost one colony by my own neglect. I may be wrong, but at the end of January I put on each hive a 2lb. box of candy, with glass top, whether they want it or not. Change of food is good for the bees, and after they have eaten through the centre of the candy one can look at them at all times without disturbance, as it keeps them to the centre of the hive.—J. H. MEYER, Fulham.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS

Division-Board and Dummy (p. 25).—In response to W. R. Harris, my experience with shortened division-boards has been unsatisfactory, and I have tried them extensively. I found them a nuisance. I would pick one up to divide a stock only to find that it fell short of its purpose. In other words, I had two sizes in use, which involved endless confusion. Now I have added strips to the bottom edges to make all alike. As for the trial of finding honey-comb behind the board, a single experience should be enough for any one. I have some hollow feeder-dummies which do not reach the floor-board. They are, however, so wide that when placed at each side of the brood nest contraction is ample without a space behind larger than a bee-way. They are a kind of hybrid dummy. May I draw attention once more to the use of these terms which are not properly interchangeable.

Intelligence in Bees (p. 31).—Evidence is accumulating to show that the bee is a creature of personal habit. Individual bees probably leave and enter the hive by their own route, and possibly have their accustomed corners in the hive itself. M. Bonnier's researches show that there is still a field for hive observation of the individual bee, and should stimulate observers. They sent me out to see if his conclusions could be verified in the open, and certainly the actions of some bees working upon snowdrops seemed to point to the existence of "Tom Tiddler's ground." Incidentally I may say that these bees were gathering pollen, but I could not bring myself to the killing of one of these early foragers to determine whether they also found nectar.

Procuring Surplus (p. 32).—Those bee-keepers who are willing to arise at 4 a.m. to remove surplus may be glad of the hint to remove most of the covering overnight, so as to cool the supers. I doubt if this described method of putting the escape under will act as a life-saver. Will not the brace-combs crowd up in front of the sweeping escape-board, and thus cause mess and slaughter? Honey is often placed between brood-frames and super. The other method described would seem far superior. One of the unstated advantages of excluder is that such combs are reduced to a minimum. It is an ungodly business separating a well-attached super from a number of loose frames. As to ventilation: could this not be accomplished by propping one side of a roof up with a small object? Then a shower of rain would cause no trouble.

Standardising (p. 39).—This comparison between the Langstroth frame and our standard is not, I think, of much value, or perhaps I have not understood it. Possibly "D.M.M." refers to a Hoffman frame with top bar ⅞in. thick. Otherwise considerable difference exists. The Dadant-Langstroth book gives the comb area as about 149in., which involves much thinner bars. Our own comb area is at most 108in., so that roughly speaking the comparison of hive area is as three to two for the same number of frames.

Parthenogenesis (p. 44).—This exceedingly interesting article by Miss Betts assumes Galton's law to hold good. But does it do so to the extent assumed, considering the missing ancestors? Can the female ancestor exercise the influence of the missing male? For that is what these figures assume. Thus, in the first worker generation the influence is equal, there being two parents. But in the second the influence is shown as three to one, whereas the ancestors are as two to one and so on. In other words, if the male parent of the first generation may claim his full half of the parental influence, why shall not the parent of the second claim his third? I do not know that this holds good, but if it does, it does not dispose of Miss Betts' comforting conclusion, whilst it leaves room for interesting speculation as to the source of the remaining fraction of the inheritance. May we suppose this due to what Weissmann terms the germplasm, which is responsible for the other half of the inheritance? If so, race characteristics such as the swarming trait are probably too persistent to be bred out easily.

Foul Brood Legislation (p. 54).—I have

read with much pleasure Mr. Sharp's letter on this subject. His reasoned and reasonable objections show a tempered view of the matter which is not always accorded by perfectly sincere opponents. And when he frankly throws over the claim to exemption I feel like extending the hand to him. I may assure him that the objections he raises have no ground in the B.B.K.A. draft.

Queries and Replies.

[8285] *Fertilization of Peaches by Bees.*—I should be obliged if you could answer the following through the "Queries" column of your excellent journal:—Some peach trees in a hothouse are coming into blossom, but as the bees in the district are not yet flying they would be unable to fertilize them. Would it be advisable to shift a hive into the hothouse, taking care that all windows were closed? The warmer atmosphere and scent of the flowers would presumably tempt the bees to come out, but what would be likely to happen when the hive was put out into the open again after one or two days? —F. R. Glasgow.

Reply.—It would be cruel to sacrifice the lives of the bees in this way. Bees are now flying on warm days. Leave the ventilators open and they will get into the peach-house. They will find their way out in the same way and return to the hive, but if you put the hive into the house they will not find their way back.

[8286] *Dealing with "Isle of Wight" Disease.*—"Isle of Wight" disease has broken out in my small apiary. I discovered two stocks had died about two months ago. I then put it down to queenlessness, but later on found three more dead. A week ago I opened the other stocks, and found one after the other dead, till I came to the last, which was my strongest stock last year, and in this some bees were still alive. I completely overhauled the stock, with the assistance of a second class expert, and found traces of the disease, also when the bees took to flying they pitched on the ground and began to crawl about up bits of stick, or anything close by, so I think it is too obvious that the enemy has come to this district at last. I should like to know: (1) Concerning the hives, shall I disinfect them, scorch them with a blow-lamp, and then repaint them outside? (2) Is the honey any use for food, as there is a lot of stores in each of the nine hives? (3) Can I melt down the combs, or had I better burn them? (4) If I boil the section-racks in a large copper with Jeyes' Fluid in the water, would it be safe to use them again? If so, how long ought they to boil, or shall I have to burn these also? (5) Would quicklime be best with which to disinfect the ground before starting again? I have been keeping bees for the the last ten years, and have never had any trouble before. I have always taken in your valuable little Journal, and have learnt all I know from it, and the "Guide Book." I especially appreciate Mr. Herrod's "Hints to Beginners." Trusting you can help me in my present difficulties, as I want to start again as soon as I can get ready.—Peverell, Dorset.

Reply.—We are very sorry to hear of your misfortune. (1, 2, 3) Do not try to save anything but the hives. Treat them as you suggest with the blow-lamp and paint. (4) You can also disinfect the section racks with the blow-lamp. (5) Yes, use quicklime on the ground, and be sure to collect and burn all the dead bees lying about. Many thanks for your kind remarks *re* our paper.

[8287] *Transferring Bees, and other Queries.*—Once again I trouble you with a few elementary queries:—(1) I was rather uncertain in mid-autumn as to whether one of my hives had a queen or not. Yesterday, a great number of bees from this hive were out and about. Does this show that there is a queen in the hive? Would they not, by this time, have all died without a queen? (2) I put a cake of candy on my other hive before Christmas. They have nearly finished this. Shall I put another cake on, or do you think there will be sufficient food for the rest of the winter? (3) I want to transfer my bees to new hives as soon as possible. When may I attempt this? (4) When I transfer these bees, and should the number of frames not fill the hives, shall I place those covered by bees in the centre of the body-box with a dummy on either side, or shall I fill up with spare frames with foundation?—J. W. S., Mundesley.

Reply.—(1) Not necessarily. To make quite certain, on a fine warm day have a peep at the comb in the centre of cluster of bees. If there is a queen she will have commenced to lay. Disturb them as little as possible. (2) Put on another cake of candy, it should contain pea-flour. (3) Wait until April, choosing a nice warm day for the operation. (4) Confine the bees by means of the dummies on to the number of combs they are covering at one side of the hive. As these become crowded with bees insert a frame filled with foundation next the dummy. When this is built out, insert another frame, to be the outside one, on the opposite side to the dummy, so on alternately until you have the full number. Only put in one extra frame at a time.

Notices to Correspondents.

E. H. L. (Hull).—*Suspected Dysentery.*—It is only natural for bees to take a cleansing flight after a spell of cold weather, when they are confined to the hive. This is evidently the case with your bees.

F. V. W. (Glos.).—*Dead Bees in Front of Hive.*—1. The bees have evidently been fighting, as every bit of hair is stripped from the bodies. 2. They are also badly constipated.

W. R. (Kent).—*Bee-keeping in Australia.*—In both countries the industry is on a good commercial footing. We are afraid it will be a little difficult to secure the position you desire, as most bee-keepers attend to their own apiaries. The Agent-General in London for both Colonies would give you names of largest bee-keepers if applied to, and you could then write them direct. At present bee-keeping in South Africa is in the nucleus state.

F. H. (Ascot).—*Bees Dead in Hive.*—We are sorry we cannot tell cause of the death of your bees, as those sent were far too dry for examination. It will be safest to burn all combs, quilts, &c., and thoroughly disinfect the hives before using again. Please note our present address. We left Henrietta Street two years ago.

H. H. (Dronfield).—*Keeping Bees near Railways.*—The proximity to the railway would not injure your bees at all. In fact, we know of bees which have been kept for years actually on a railway embankment. The bees sent have apparently died from "Isle of Wight" disease.

E. C. E. (Hants).—*Early Pollen-gathering.*—(1) It is an indication, when bees carry in pollen, that breeding is going on, but not necessarily an infallible sign. (2) The insect is a queen wasp; it certainly is early for them to be about. No doubt the mild weather has attracted her outside.

J. E. J. (Pontardulais).—*Feeding Bees with Syrup.*—(1) Moist sugar should not be used for making syrup. It is far too early yet to give syrup: you should have put on candy. Remove the syrup and substitute a cake of soft candy. (2) The strip of wood is for placing at the opposite side to the division-board, between the last frame and the side of the hive. There are no boards in the shallow frame boxes. (3) The bees will manage to reach the food in their own way.

North Devon.—*Honey Samples.*—No. 1 is mainly from clover, and is a very good honey, quite suitable for show purposes. Worth about 56s. per cwt. No. 2 is principally from buckwheat. This honey does not fetch a big price in this country. You will probably not get more than 30s. per cwt. for it.

Suspected Disease.

G. Ware (Muswell Hill).—We regret we cannot diagnose cause of death, but the bees were too dry for examination.

A. J. S. (Norwood), T. A. E. (Sutton Coldfield), C. F. D. (Surrey), H. R. B. (Brighton), and J. B. (Worcester).—We regret to say that bees are affected with "Isle of Wight" disease. Everything but the bare hives should be burnt, and the hives scorched with a blow-lamp and painted outside before being used again.

W. H. (Cambs.).—The comb is affected with foul brood of old standing, which is the cause of the death of the bees. The white cells contain mouldy pollen only.

R. D. (Kent).—Outward indications point to "Isle of Wight" disease.

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GOOD PURE ENGLISH HONEY, 56s. cwt.; 28lb., 14s.—GEORGE THOMPSON, Helpringham, Sleaford. r 77

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QUANTITY of beautiful Honey for sale, extracted and in sections; what offers?—V. BETTISON, Jacobstow Rectory, Bude. s 75

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WANTED about middle of March, strong stock pure Carniolans; write, stating price, &c.—D., 70 Cross-street, Newark. s 73

FOR SALE, Edison Gem phonograph, 3ft. brass horn and stand, 48 records, and box, cost over £5, will accept £2; or exchange for Honey.—FRED PECKETT, 9 Ramsden-street, Domestic-street, Holbeck, Leeds. s 70

Editorial, Notices, &c.

ST. ALBANS AND DISTRICT B.K.A.

The second annual meeting of this Association was held in the County Museum, St. Albans, on the 14th inst, Mr. F. P. Perkins in the chair.

The hon. secretary, Mr. E. Watson, reported that there had been a distinct and intelligent interest taken in improved methods of bee-keeping, and, further, the papers read at the monthly meetings had been much appreciated. The majority of apiaries extending over a wide area had been visited and assistance freely rendered whenever required. Demonstrations had been given in different parts of the district. At the show held from 25th to 29th July, an exceptionally fine display of honey was staged of such uniform quality that the judges had considerable difficulty in awarding prizes.

Foul brood was little in evidence, but unfortunately "Isle of Wight" disease had made its presence felt in no uncertain degree.

The thanks of the Association were due to the Herts. County Council for granting on various occasions lectures by their expert (Mr. W. Herrod), and it was felt that by their ready help they had in no small measure contributed to the satisfactory work during the year.

The treasurer, Mr. Garner, presented the balance-sheet, which showed an income of £16 0s. 6d., an expenditure of £15 3s. 7d., leaving a balance of 16s. 11d. in hand.

The balance-sheet and report were adopted. A vote of thanks to the Chairman concluded the meeting.

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

Inconvenience from the stings of Bees.—Pastor F. Kutnar, who has been quite immune to bee stings all his life, says in *Imker aus Böhmen*, that for the last three years, after manipulating with his bees, he has always had an acute attack of catarrh similar to hay-fever. On a day last August the attack was especially violent. He attempted to introduce a colony into a Gerstung hive, but was obliged to give it up because the bees were very irritable, and when he was getting out the third frame his nostrils became stopped up, and he was obliged to use his handkerchief continually, tears pouring from his eyes. As a result of the stings, he also had a form of eczema, the skin on the whole of his body became red, blood rose to his head, and the eyes became dim. He had been used to bees from childhood, but now every time he attempts to do anything with them the symptoms become aggravated. Professor J. Langer, who has made a study of bee-poison, says that now and then one comes across a constitution which cannot endure the poison from the sting of a bee, and there is also sometimes a change in the constitution, which produces the same effect in some persons.

A good Bee Plant.—Herr Pfeiffer writing in *Münchener Bienen Zeitung* recommends Bird's-foot Trefoil (*Lotus corniculatus*) as a good bee plant. It is a perennial with a long tap root, pinnate leaves of five leaflets, of which two close to the stem take the place and appearance of stipules, thus giving the plant a trifoliate appearance. The bright yellow flowers are in umbels of five to twelve, the standard being often red on the outside. It is widely distributed, common in meadows and pastures, and is valuable for its long continuance in bloom, which generally lasts from July to October. It is not particular as to soil or exposure, and does equally well in wet or dry ground, and in the open or shaded.

White streaks in Honey.—Bee-keepers have often asked to be told the exact nature of the white patches which one sometimes finds in honey, and on its surface, and M. Alin Caillas gives an explanation in *l'Abeille de l'Aube*. He says most honeys on candying become covered on the surface with a thin white film, or have streaks and patches through their whole mass. These two appearances are due to two different causes. The white film on the surface is caused by oxydation of the sugar in contact with the air, a transformation, the rapidity of which depends on the nature of the honey, and more especially on the amount of drought during the storage of the honey. This is not deemed a detriment by an expert. The patches and streaks are produced by the commencement of the separation of the constituent elements of the honey. As a matter of fact, after a certain time, sooner or later, the *dextrose* always separates from the *levulose*, owing to their difference of density.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(*Continued from page* 23.)

No. 15. WALLFLOWER (*Cheiranthus cheiri*).

NAT. ORDER, *Cruciferæ*.

This flower is a very popular one, owing no doubt to its sweet fragrance, tons of it being sent each spring into the mar-

kets of our large towns and cities, and in its cultivated state is known to all. Very few, however, have seen it in its natural habitat, many not even know that it is one of our *wild* flowers. As its popular name implies it will be found growing on walls, and is frequently met with on the stone walls which divide the fields in Derbyshire and other counties further North, where we should expect the lack of earth and moisture, the scorching rays of the sun, and the fierce winds would render its existence impossible. It is also often found on the walls of ruined abbeys and castles, &c. These places furnish a veritable hunting ground for one who loves flowers. At Easter in 1909, I paid a visit to Furness Abbey, a grand old ruin, and on its walls I found Wallflowers in abundance, Snapdragons, Hare Bells, Herb Robert, Stone Crop, Landcress, Dog Rose, and Pellitory, to say nothing of the Liverworts, Mosses, and Lichens. At Newark Castle, too, last summer (1911), I found most of the above-named, with Elder and Mallow, one species of the latter growing on the highest wall, another luxuriating at the foot of it, on the edge of the Trent.

Amongst the lovers of this flower may be mentioned the immortal Scott, who says:—

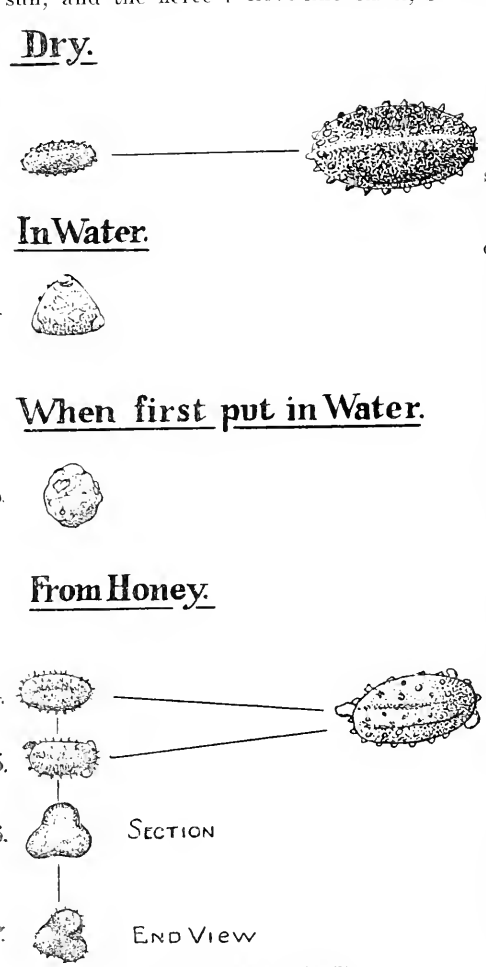
"The rude stone fence, with fragrant
wallflower gay,
To me more pleasure yields,
Than all the pomp imperial domes
display."

Its fragrance is brought before us by Burns, in:—

"Yon roofless tower where wallflowers
scent the dewy air."

Being one of our earliest flowers it is well suited for inclusion in the list of those to be grown in the home garden for our bees. It yields both nectar and pollen freely, and on warm, sunny mornings the bees will be found revelling in its blossoms.

It is sometimes called Gilliflower. This latter name is most probably a corruption of the French *Girofle*, or it may be of the Latin *Caryophyllus*, from its clove-like smell, similar to the Pinks.



POLLEN OF WALLFLOWER.

The pollen of this plant is of a light greenish-yellow colour, but when packed on the legs of bees it assumes a darker shade, approaching a dull green. It measures when dry $\frac{2}{1000} \times \frac{1\frac{1}{2}}{1000}$ of an inch, elliptical in outline with three deep grooves along its sides, is covered with pimples or very short spines, and shows a slight ridge on the full part between the grooves, as seen at No. 1 and its enlargement.

When placed in water it immediately takes on a triangular form with a process at each angle, as seen at No. 2, and measures $\frac{1\frac{1}{4}}{1000}$ of an inch from angle to angle.

If placed in honey it becomes more spherical, though the form is very irregular, as will be seen at No. 3.

If left in honey for some time, and then abstracted in the usual way, we find it will have regained to a great extent the original form of its dry state, but more transparent, and with pseudo processes breaking out at irregular intervals over its whole surface, as in No. 4.

A section across the middle of the grain is shown at No. 6, whilst No. 7 shows the arrangement at the end.

In this latter state the spines are more subdued, although still plainly visible.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE B.B.K.A. COUNCIL.

[8378] Reasonable criticism of the methods adopted by the B.B.K.A. Council should always be welcome. Judging from Mr. Macdonald's remarks, on p. 62, of the last issue of this JOURNAL, he seems to be unaware that there is an appointed Board of Examiners for first and second-class experts' examinations, and that the names of the examiners were published on page 161 of the volume "B.B.J." for 1911. Educational matters in general receive attention in full council, and special questions are referred to sub-committees as may be found necessary.

The long-established practice of requiring first-class candidates to lecture before the Council was established, it may be presumed, chiefly in order to test their readiness and general capacity for addressing public audiences, and of such capacity any member of the Council should be able to judge. Attendance at Council meetings must of necessity be fluctuating, but it is hardly possible that on any particular occasion there should have been no members present with sufficient technical knowledge to detect a wandering from the paths of orthodoxy. Moreover, only those candidates that have already satisfied the examiners as to their general proficiency come before the Council to be tested as lecturers.

I was the first, I believe, to bring forward in this JOURNAL the merits of Mr. Hopkins' New Zealand Bee Pest Act, and since then I have more than once pointed out the advantage ensuing from the legal prohibition of the use of any receptacle but frame hives as *permanent* abodes for bees. Yet I am unable to join Mr. Macdonald in his whole-hearted anathema on skeps. For hiving swarms and other temporary purposes they must remain unequalled. I should rejoice if the prohibitive clauses of the New Zealand Act could be forthwith adopted in this country, but if it be true that the time for such drastic legislation has not yet arrived, we cannot do better than spread the most enlightened systems available, and at the same time earnestly dissuade persons of all classes from keeping bees who are not prepared to look after them properly. A neglected modern frame hive is little better than the old make-shift box-hive, which still remains in certain places a disgrace to British bee-keeping.—H. J. O. WALKER (Lieut.-Colonel), Lee Ford, Budleigh-Salterton.

ODDS AND ENDS ABOUT BEES.

[8379] In the autumn of 1910 I was fortunate enough to purchase a "Black" queen from a well known contributor to the columns of the "B.B.J." The stock which I re-queened did not breed much before covering down, and about the beginning of January, 1911, I noticed that the bees were all confined to one seam—second from the side of the brood-box (W.B.C. hive). I had fillets of wood over the top of the frames, and lest this queen should perish I resolved to supply artificial heat. Beneath the grate of a hot frame I heated a brick and wrapped it in several folds of old carpet and placed it over the cluster. I did this morning and evening until the end of March, when I considered a feed of warm syrup advisable.

As I had to attend to this hot frame myself the trouble was not great, and did not take above two or three minutes each time. I never attempted to disturb the bees further than now and again to raise the corner of the cover to see if the number of seams was increasing. This stock flew less in the spring (in proportion) than the rest, and, when examined in May, showed no signs of dysentery—the usual thing with a weak stock. From this hive, before the close of the season, 1911, I obtained about sixty sections—a reward I little hoped for.

I have three stocks, started from nuclei last year, which I have treated with hot bricks in the same way as described, since the New Year, and all are doing well under the treatment.

I find the hot bricks have kept away all moisture and dampness from the coverings, and that, combined with the heat, has prevented the bees consuming food to obtain living warmth.

Lee's Section Rack.—Mr. Herrod's comments on this section-rack (page 72), as fit to be used above or below a shallow frame, lead me to say that I have a much simpler and equally effective rack for the same purpose. I had intended to mention it long ago, but have not had much time for writing during the last two years. If the ordinary $12\frac{3}{4}$in. wide rack has a flange of $\frac{1}{2}$in. on each side this is quite sufficient to cover the frames of a hive. To use one of shallow frames above this, only requires a fillet 1in. broad and $\frac{1}{2}$in. deep nailed along the outside top edge of rack. Three or four small oval sprigs driven from the inside and clinked on the outside of the fillet render it quite strong enough to lift the rack by.

Any bee-keeper can make all his section-racks interchangeable with shallow frame-boxes by nailing on the fillets or strips I have mentioned, and making the $\frac{1}{2}$in. dimension fit evenly along the top side of the section rack.

Drone versus *Worker Base Foundation in Shallow Frames.*—My experience is that in the early season the central drone combs are only filled round the outer parts of the frame, the *ring* in the centre of each being kept polished in anticipation of immediate occupation by drone brood. Worker combs are filled from top to bottom right off. Therefore I put six brood-combs in the centre with two of drone next the side of the box, on each side of the six. Later in the season, when drones are plentiful in the hive, there seems to be no objection on the part of the bees to storing the drone comb in the rack quite full.

Until after the first extraction of honey I have never any pollen stored in the shallow frames; by that time room below is mostly occupied by brood, hence the appearance of pollen upstairs. I allow it to remain in the cells during winter, and wash it out before putting frames on in the following year.

In removing surplus in shallow frames, I adopt the following expeditious method: All the supers to be taken from one hive are removed at the same time. One puff of smoke is given under the lowest one, and all are lifted on to a flat board, so that no bees can enter or leave. The wrappings are removed from the supers and put on the hive, and at the same time a towel placed over the former. An empty box is placed on another flat board and covered with another towel. A sloping board is put on the hive front, and each frame (wired and nailed, of course) is shaken in front of the hive and placed in the empty box. The towel is only removed to lift out or place in a frame. The bees being removed a few feet from the hive rapidly collect in clusters on the frames, and drop off at the first shake. The cleared frames are removed at once to the house, extracted, and returned before another hive is interfered with, unless there is someone assisting at the extraction. Ten minutes is quite sufficient to clear two racks once they are removed from the hive.

The Open-air (but not new) Cure.—The last time I had an outbreak of foul brood I removed the affected frames and syringed the whole contents—brood, eggs and honey—and finally syringed with phenyle. For a few days the frames were hung by a string, each from the boughs of an apple tree. They were then returned to the hives, and I have never had any sign of the disease since.—D. V., Dunaskin.

FERTILISATION OF PEACH TREES.

[8380] I was much obliged for your interesting reply in last week's issue (page 79). Curiously enough this very point is dealt with in the present (Feb. 15th) number of *Country Life in America* (page 40) where D. Everett Lyon writes:—

"A few years ago I was interested in the work of a truck grower at Morganville, N.J., who aimed at producing cucumbers in hothouses in early spring . . . but how to get the blossoms properly fertilised was the problem. To do this he placed a hive of bees in the end of each house, and when I visited him in early April, the bees were fairly rushing from blossom to blossom fulfilling their allotted task, but the pathetic feature of the thing was that the bees did so at the expense of their lives, as when loaded they seemed unable to find their home and persisted in flying against the glass top of the house until they died from exhaustion. Mr. Becker, while he regretted this, did not consider it a distinct loss, for, as he said, 'I was through with them when my blossoms were fixed,' and he did not hesitate to purchase new bees each season for the work, as it meant thousands of dollars to him."—F. R., Glasgow.

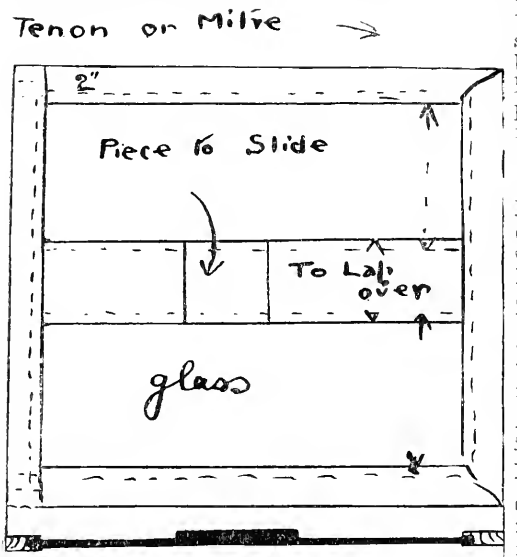
WINTER FOOD AND WINTER COVERING.

[8381] I was interested in reading the letter from "T. D. N.," Lanark (p. 47). His opinion as to the suitability of heather honey as a winter food surprises me. The result of his experience appears to be that heather honey as a winter food is almost tantamount to poison, for he says that rather than be dependent on this grade of honey he would destroy all his bees in the autumn.

Will "T. D. N." tell us wherein the unsuitability of heather honey consists, and particularly the disastrous effects it has had upon his own stocks? I note he is the owner of about one hundred stocks, and that he lives in a purely heather district. In the autumn, therefore, his stock combs must be almost full of heather honey, and so I infer from his letter that he withdraws every ounce of heather honey from his bees. I am curious to know how he provides such a large number of stocks with the requisite winter food. Will he please enlighten us? I have kept bees for fully a quarter of a century, and they have always been dependent on heather honey as a food from August until the end of the following May. Provided my bees enter winter quarters fairly strong, and the queen survives, generally speaking they pull through all right. Can "T. D. N." explain the reason of the opposite effects of heather honey in

Lanark and in North-West Durham? A correspondent in "B.B.J." a few months ago stated that he put his stocks into winter quarters in September, and that the combs were heavily laden with heather honey, the *ideal winter food!* I again appeal to readers living in heather districts to give us their experience regarding this matter.

I have been very much interested also in the correspondence on Porous *versus* Non-porous Quilts, and here "T. D. N." preaches the doctrine that propolis is porous. It is unnecessary to join issues with him on this point, for whether propolis be porous or not, I think he will admit that glass is non-porous, and we have it on the testimony of Mr. Dalzell, who has used glass coverings for several years, that the system has been entirely



successful with him. He goes so far as to say that he has never lost a single colony through the use of glass quilts. Will Mr. Dalzell inform us if he has ever noticed dampness in his hives as a result of the use of these coverings? Perhaps he will also tell us the width of his entrances. I notice Mr. Bowen (page 56) states with non-porous quilts he uses an entrance 16in. wide. This, in my opinion, is excessive. With the object of conserving heat, I am this winter for the first time using non-porous quilts with an entrance 5in. wide.—W. P., Blanchland.

GLASS QUILTS.

[8382] I bought my first swarm in June, 1909, and on packing for winter used a board over the frames with a 3in. hole for feeding; the hive was so full of bees in April that I made an artificial swarm, then learnt through the "B.B.J." that I was too previous, so replaced it after a week on top of the queen's new home, with brown paper between as directed in "Guide Book" for uniting. The end week in May I again separated them, and soon found a queen laying well. Both stocks swarmed twice, the swarms requiring little feeding. On packing for winter, I again used the board on one hive and strips of glass on the other four laid on ⅜in. strips of wood to form winter passages. I quite see that a frame would be neater and better, while I endorse what Mr. Dalzell (page 33) puts forward in favour of glass quilts. I would like to suggest a cheaper one, and send a rough sketch to explain. You will notice I say "strips of glass"; it does not matter how many strips are used, as bees will make the joints air-tight. The centre strip should be 1in. wider than opening, and be cut in three pieces, the centre piece to lift off when required for feeding purposes. Hoping this may be of service to fellow bee-keepers.—A. W. Rigler.

[8383] I should like to comment on Mr. J. Dalzell's article in Bee Journal (page 33), re "Absorbent v. Non-absorbent Coverings," if the Editor will permit. For my own part, I should call a glass covering such as he recommends nothing but a nuisance, as I consider any kind of quilt which will not bend is worse than useless. I like a material that rolls back freely, though I do not (although it is generally recommended) use a calico or linen ticking quilt next to the bees, as I have found these materials are most likely to be propolised. I put a good, substantial, hard woven carpet next to the frames, and never have had any trouble, for the last twenty-five years at least, with propolis. For winter, on top of the carpet I place several thicknesses of paper and then clean sacking or any dry and warm material I can get hold of. I congratulate myself on my cheap and efficient covering, and am certain this is the most serviceable mode of packing and covering bees. A glass quilt would be just as bad as a skep for manipulating. Suppose, for instance, if one wanted to help a weak stock in spring by giving it a frame of brood from a strong hive, with my pliable quilt all one has to do is to turn the quilt back, select the frame, and after lifting it out turn the quilt back again. Insert it in the weak lot in the same way, cover over, and the job is done, but with the glass quilt you would have to lift the whole "show" off each hive, thus giving no end of unnecessary trouble. Therefore, I cannot refrain from warning such as myself (novices) to look before they leap. I don't say I will not try Mr. Dalzell's quilt and

prove it personally; perhaps, I also may become a convert, but I have given my present views. I find the American cloth quilts quite satisfactory, especially over good, strong stocks, with plenty of packing above. Being located about 1,000ft. above the sea level I think I have a very fair chance of proving which method is the most practical. Those fortunate bee-keepers on lower levels know little about the climatic differences we experience.—W.R.T. (Pem.).

NOTES FROM NORTH HANTS.

[8384] *The past season* was a glorious one for those who revel in the hot weather, and I include myself amongst these. Although the plants in the gardens were scorched up, and at times at midday all were glad to get away from the scorching rays of the sun, never to my mind has there been such a glorious summer, but there, I cannot claim to go back sixty or seventy years, and recall the experiences of those days. As regards the honey season, I do not remember ever obtaining a finer quality of honey, the quantity was good, but not much above the average, due in a certain degree to the disadvantages we have been, and are now, labouring under, but of that more anon.

The Value of Honey.—I am glad to see this subject coming to the fore in the "B.B.J." lately. Bee-keepers who are desirous of selling their produce should always make a great point of this. In my household honey is more than a delightful sweet, only to be obtained in the summer time. We use it for all kinds of ailments, including cuts, burns, sores, &c., and the children look naturally to the honey pot for a cure of all these little ailments relative to child life. I have lately been reading "Honey and Health," by Archibald Hope, and would advise all who keep bees to get this book and read it for their profit and instruction. Honey tea is in greater demand lately, and I have had to haul down my notice, "Honey for sale," in order to meet the domestic requirements. There appears to be a fine opening for us bee-keepers if we only read the times aright. Mr. Hope, in his little book, after giving us a lot of useful information about honey, diverges somewhat in the last chapter. "Our national health is below par"—eat more honey, the Germans are coming—keep more bees. Imports and Exports, Old Age Pensions, the Franchise, and the Fleet, and Marksmanship all appear according to the writer to be in some mysterious way related to our beloved craft. So be it. Bee-keepers, you have your sweet salve, and a great army if need be, with always ready sharpened "swords," to meet any invaders; indeed, so effective is this tiny weapon that I have mirthfully witnessed a great man 6ft. in height yell and fence at a single thrust. What would be the result of a combined attack from 30,000 of our tiny Amazons? Keep more bees!

The "Isle of Wight" disease is still amongst us, an unwelcome guest. Some time ago Mr. Crawshaw took me to task for calling it the "unnamable disease," although the term I originally used was subject to the Editorial blue pencil. However, I perceive that the Editor was right, for during these years a name has not yet been forthcoming, beyond the "Isle of Wight" disease or "The so-called 'Isle of Wight' disease." Now, I venture in my humble way to suggest a name whereby this scourge may be known. "Howitis" (Isle-o-w'ght-is, see?) On paper the name looks rather Yankee, but I think it might do away with the present long, awkward name. Now, Mr. Crawshaw!

The scourge seemed to have received a check during the heat of last summer, and raised the hopes of bee-keepers that the dreaded microbes had found a grave in the sun bath, but alas! On every hand I hear of stocks being wiped out, and the prospect for the next harvest is not worth much.

I don't remember having seen an authoritative statement regarding the wholesomeness of honey from stocks affected with the disease ("Howitis"). I know that many hundredweights, perhaps tons, have been consumed, without apparently any ill effects, but the public are generally thoroughly frightened at the thought of consuming food which has been in contact with disease. Perhaps we bee-keepers may see a definite statement regarding this. How are the bee-keepers in Cornwall and Devonshire getting along after the "fright" at the big honey harvest last year? Lucky people say I, for honey is now scarce enough this way. —HANTS BEE.

EXPERIENCE WITH "ISLE OF WIGHT" DISEASE.

[8385] My experience of this disease is a somewhat unusual one. In the summer of 1910 I had three well-stocked hives. As the summer wore on I noticed something wrong with the bees in two hives; they were being robbed by others from a distance, and the bees were crawling about outside the hives. Towards the end of the summer, one hive was empty and the other almost so; the third keeping strong. During my absence from home my man bought two small lots of driven bees and put them on three infected drawn-out frames in each hive, and later

I added a few more bees. During the winter of 1910-11 I began to feel that it must be the "Isle of Wight" disease from which my bees were suffering. An inspector from the Board of Agriculture called to see me about January, 1911, to investigate the disease in the district, and from the information I gave him he expressed the undoubted opinion that it was the "Isle of Wight" disease, and if the bees did not die during that winter they would certainly do so in the late spring. On the first mild day I opened my hives. The third strong hive where I suspected nothing the bees were all dead, though there was plenty of food. To my great surprise, in my other two hives where I knew disease existed, I found a lot of brood and plenty of stores, and the two stocks had wintered well and looked thriving. During the summer, 1911, they increased enormously and very quickly all the body-box was filled completely with brood and honey. I put on supers; one was three parts filled with honey, the other the bees would not enter. As the summer went on the bees in both hives gradually dwindled and in October and November all had died.

What seems to me unusual is that I should winter two very small lots in two infected hives with infected drawn-out frames, and also a few infected bees, that they should thrive and increase abundantly and produce a lot of honey during the summer of 1911, and that my third stock, which was strong and showed no sign of disease, should all be found dead in the spring. It only proves to me that when the disease shows itself in an apiary it is quite useless to go on hoping it will not increase. It will spread to all the hives sooner or later, and what to my mind is so serious, is that those bees are infecting all the bees in the neighbourhood. It is quite conclusive that in these cases the whole apiary must be destroyed. In all doubtful cases Dr. Malden is only too glad, free of charge, to examine any bees sent to him, and report results, and I would strongly advise all those having bees in an infected area to send him twenty or thirty bees in a box for examination.—WILLIAM FAIRBANK, Windsor.

CARNIOLAN BEES.

[8286] The temperature last night (22nd Feb.) did not go below 50deg. Fahr., and to-day I noticed my Carniolan bees gathering nectar or pollen from *Laurustinus* at 7.45 a.m., and pollen from *Pyrus Japonica* by 9 a.m. I counted sixty bees laden with pollen enter the hive in one minute. My other stocks (blacks and crossbreds) had not begun to work at 8 a.m.; by 9 a.m. about twelve a minute entered the hives with pollen; the weather was foggy and damp.—J. D. A., Somerset.

AMERICAN AND COLONIAL PAPERS

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Three Essentials.—A Dixie bee-keeper writing to the *American Bee Journal* insists that the man or woman starting bee-keeping must be possessed of (1) inclination, (2) energy, (3) will, if success is expected to follow. The pursuit must offer the novice a great fascination, and there must be a continuous study of bees and bee literature. A bee-keeper needs at times all the energy a human being can possess, therefore the apt beginner must be a hustler. Then he must have a fixed and determined will to succeed. Having placed his hand to the "plough," he must not turn back.

One Essential Wanting.—Dr. Miller questions me on page 6, in regard to my use of the phrase, "I told you so." My opinion was, is, and I hope ever will be that any one proceeding to cure foul brood, or to get rid of the disease from his apiary, must clear it out root and branch—leaving no single germ or spore behind to bud and blossom, and so to bring forth more evil fruit. One essential to a radical cure is to thoroughly cleanse and disinfect every hive and appliance directly brought in contact with this contagious disease. Being a doctor, he must recognise and appreciate the high value the medical fraternity place on these essentials when dealing with scarlet fever or small-pox. Our sanitary authorities rigidly insist on disinfection as a *sine qua non*. If everybody agrees that severe epidemics are thus suppressed, why should bee-keepers doubt their efficacy. I am pleased to note that the newest Canadian Act demands thorough disinfection, and where this is impossible *destruction by fire* of diseased hives and appliances.

Rate of Flight.—"I have watched our bees," says "Doolittle," "and I have watched our great Empire express train on the New York Central Railway, running at the rate of a mile a minute, and it passed my vision at no more rapid rate than bees do over the hill on a still day when working on basswood from two to four miles away." If correct, this is another for the bees.

Bees Pay!—Starting with a single colony of black bees in a shoe box, for which he paid six dollars, a correspondent of *Gleanings* reports that he has done so well with them that he has made enough profit to buy 160 acres of land as good as can be bought in his State of Michigan.

Dark Honey.—"I sold my dark honey

sooner than my light," says another writer, and because on account of its higher percentage of phosphorus and iron, it can be recommended for nervous and anæmic persons, scrofulous children, and for all those who have to do much brain work.

Government Action.—Mr. R. Beuhne, the well-known Australian bee expert, has been appointed Inspector under the new Bee Diseases Act, and the Government is to carry on investigation of bee diseases, and impart information on all apiarian matters. One point in the Act worth noting is the fact that the regulations make it punishable for any one to expose honey whether diseased or not. The area to be dealt with is the whole State instead of a number of small districts or divisions.

Killing to Cure.—This drastic treatment is one I have persistently advocated in virulent cases of foul brood. The *Canadian Bee Journal* especially attacked me and tried to prove that they had got a better system in the Dominion. Here is a short quotation from section 3 of their latest Act: "Wherever the Inspector is satisfied of the existence of foul brood in its virulent or malignant type, it shall be the duty of said Inspector to order all colonies so affected, together with the hives occupied by them and the contents of such hives, and all tainted appurtenances that *cannot be disinfected* to be immediately destroyed by fire." Comment is needless!

Standardisation.—In last "Extracts" I noted that there was a very strong tendency to adopt the "Langstroth" as the standard frame in America. Now the *Review* advises us that progress towards standardisation is still further advancing: "The National Association has adopted the double tier shipping case, and the $4\frac{1}{8}$in. by $4\frac{1}{4}$in. section as the standard. This movement for unity in supplies is a stepping-stone to more economical and direct dealing between producer and consumer." As one who fought for our "standard" section, I feel pleased to learn that the same view is extending in the States.

Automobiles.—These convenient vehicles are being used more and more in America year by year. Their speed counts greatly in their favour in visiting our apiaries. An "auto" can run up close to the hives to be dealt with, thus saving a lot of carrying, as a horse had to be left some distance away to avoid disaster when bees were in a waspish temper. Then there is no danger of a run-away catastrophe.

"Straws" from South Africa.—All the leading appliance dealers in Johannesburg and Cape Town now stock English hives and appliances, which is just as it should be. The hives illustrated in the latest *South African Journal* are a good model W.B.C. and a "Welwyn" hive. Judging from expert reports on specimen brood-combs they have neither bacillus "alvei" nor "larvæ." The association is now affiliated with our B.B.K.A., and they have begun to test third-class candidates "at home." The association membership fee is 12s. 6d., but from this has to be deducted 6s., the price of the journal, which is delivered free. In a "retrospect," the editor records that "actual knowledge of bee-lore has been in the hands of comparatively few" in the past, but even now the fruits of the spade work of the past few years is apparent, while the future prospect is bright and rosy.

Mistakes.—Summing up the whole question, we may say that all mistakes commonly made by beginners may be classed under two heads: First, failure to bring the colony into the right condition by the time the main honey-flow begins; second, failure to have the colony in the right condition for winter. Mistakes under the first head mean a loss of the crop; and those under the second mean a loss of the bees themselves. Both are costly, and both are *preventable*.

TO "D. M. M."

ON PASSING HIS FIRST CLASS EXAMINATION.

When "D. M. M." in classic mood
  Smacking his Council's pate is,
Must they, to show their gratitude,
  Him penance offer gratis?
The best behavèd bee will sting,
  If pressed by thumb too direly,
E'en though next moment death should bring,
  And she be "kilt" entirely!

No! "D. M. M.," your honour's great,
  In Beedom you'll pass muster;
In sweetness honey emulate,
  But not in *wax* (thwacks) the cluster!

Scribimus indocti doctiqui.

CROYDON B.K.A.

"ISLE OF WIGHT" DISEASE.

A well-attended meeting of the above Association was held on Friday, 9th Feb., at the Horniman Hall, Croydon, when Mr. Tickner Edwardes opened a discussion on "The Need of Legislation to Deal with the Diseases of Bees." Mr. Edwardes dealt with the subject in a masterful way and held the attention of his audience from the start to the finish; he produced facts and figures to show how necessary it was to have legislation to deal with diseases of bees, and mentioned that it was a curious fact that the chief opposition came from the largest apiarists. The

chief obstacle, however, was the skeppist bee-keeper, although he was in favour of their (the skeps') entire abolition, and objected in fact to anything but movable comb-hives, he was in favour of compensation, although he thought that if too high a figure was to be demanded the County Councils would oppose the proposed Bill.

Mr. Edwardes went on to explain how he became "mixed up" in bee politics, but he could not sit still, he said, and read each week in the "B.B.J." of the appalling loss of bee life through diseases, and thought it was time that the bee-keepers throughout the whole country were up and doing unless the bee-keeping industry was to be wiped out. A lengthy discussion followed the address, and a resolution in favour of legislation to deal with bee diseases was unanimously passed.

A vote of thanks was accorded Mr. Tickner Edwardes for his interesting lecture, and to Mr. A. Wakerell for presiding. Both having replied the meeting closed.—A. Wakerell, Hon. Sec., C. and D.B.K.A.

Queries and Replies.

[8288] *Insect Pests in Supers.*—The 9th inst., being a mild day, I examined several of my hives. I am short of room for storing, so made parcels of three shallow frame supers containing combs which had been extracted and cleaned (?), and placed them on hives thinking they would be alright, but find on the quilts of these hives a quantity of small maggots and beetles, of which I am sending specimens. Two or three seasons ago I purchased the drawn-out combs in the supers from a bee-keeper who was giving up, but I had not used them until last season, and for the first time in my experience as bee-keeper, I had sections affected by mites, which I fear must have originated from those frames and that these pests are the mites developed. I should like your valuable opinion through the "B.B.J.," also your advice as to how to get rid of them.—W. A., Hunts.

Reply.—The beetle is *Byturus tomentosus*, and belongs to the family *Dermestida* (Bacon Beetles). The adult beetles live on flowers and the larvæ feed on dead animal substances. It is, therefore, quite likely that the eggs were laid in the refuse of the hive as the female usually selects a place where the young larvæ will at once find food for their sustenance. After several moults they become pupæ. The white specimens sent are the pupæ, which have partially developed elytra, wings and legs enclosed in separate sheaths, are incapable of movement and do not take food. After some time they change colour, throw off a membranous skin and appear as beetles. The beetle at first is soft and nearly colourless, but hardens after a short time and the wings and elytra assume their proper proportions and permanent positions. The beetle is then ready to feed on flowers. If touched it will feign death. It will do no harm in a hive, and can be kept away by strict cleanliness.

[8289] *Artificial Queen-Rearing.*—I am about to rear a few queens on Mr. Sladen's system, and shall feel much obliged if you will kindly answer the following questions. (1) Will the bees carry eggs to artificial cups? (2) When capped over can I put these in the hives to be requeened after the twenty-four hours has elapsed without any risk? (3) should these be hung between top-bars, or which is the best way to put them in?—C. H., Weston.

Reply.—(1) You will have to transfer larvæ not more than three days old. (2) Yes, i.e., twenty-four hours after the old queen has been removed. (3) If the weather is warm you can hang them between the top-bars, or, better still, they can be pinned on to a comb next to the brood. Take care not to damage the cell. A lady's hair-pin is very useful for the purpose.

[8290] *Exposing Combs in Open Air.*—(1) A few weeks ago I bought from a retiring apiarist several racks of shallow frames, drawn out. Although they were certified by an expert to be free from all disease, I decided to be on the safe side and to disinfect them. Making a solution of Izal, according to directions, one tablespoonful of Izal to 10 pints of water, I soaked the frames in this for an hour or longer, and then extracted the liquid in the extractor, and spread the frames in the open air to dry and become deodorised. In half-an-hour they were black with bees (although my hives were a considerable distance away) which were feeding greedily on the decoction of Izal and honey! Being a novice I was somewhat alarmed as to what the result would be. Will you be good enough to tell me if there will be any danger to the bees? My stocks are very strong and healthy, and were wintered on 50lb. of honey to each hive; so they cannot be in want of food. (2) Need I feed them at all? (3) What number of frames and sections should the Dreadnought Extractor, price 50s., take?—M. W. B., Redenham.

Reply.—(1) Your best plan would have been to disinfect by fumigating with Formaldehyde which is odourless, instead of soaking them. There is danger of setting up robbing by exposing combs as you did. Time alone will tell whether the combs were diseased. (2) There is no

need to feed if the bees have plenty of stores; an examination only will reveal this. (3) We have never used this extractor. You had better write to the manufacturer.

[8291] *Queen Rearing.*—Will you please answer the following questions through the "B.B.J."? (1) When is the earliest date in North Lincolnshire that drones are flying to fertilise young queens. (2) To keep a good strain of bees pure is it wise to try and arrange that young queens shall be fertilised with drones out of same hive? Could drones in other hives be kept in for a few days by using queen excluder over the entrance of the hives.—QUEEN, Grimsby.

REPLY.—(1) In May. (2) It is not wise to inbreed. You can prevent drones being reared by close spacing the frames. It is not advisable to shut them in with queen excluder, as they would block the entrance trying to get out and hinder the work of the bees.

Notices to Correspondents.

J. P. (Wallingford).—*Painting Insides of Hives.*—The objection to painting the insides of hives is that moisture collects on the paint and makes the surface wet and cold for the bees to pass over. Also should it be necessary to disinfect the hive again the paint will be found troublesome to remove. If you disinfect by means of a painter's blow-lamp there is no need to paint.

H. J. O. (Wilmslow).—*Drones Flying in February.*—It does not often occur, and points to queenlessness.

BOXMOOR (London, E.C.).—*Suspected Disease and Queen-rearing, &c.*—(1) We are sorry to say that the bees have died from "Isle of Wight" disease. (2) The best plan will be to rear the queens by means of nuclei. You can commence in May. Many thanks for your appreciation of our efforts. We shall be pleased to have photo of your apiary.

C. H. (Bromley).—*Dealing with Diseased Hives.*—Personally, we should burn all combs and frames, and well disinfect all the hives, and shallow-frame supers, &c., with a painter's blow-lamp. You will then be able to start again with safety, and we wish you better luck.

W. C. H. (South Devon).—*Using Last Season's Syrup.*—So long as no fermentation has taken place the syrup can be used. It might be well to boil it up before using.

J. M. (Bridgwater).—*Spring-Cleaning.*—(1) It is necessary to spring-clean the hives after winter is over, every year. It should be done on a nice warm day, early in April. (2) British bees are the best in every way for this country.

H. W. (Gravesend).—*Pollen-gathering from Hazel.*—Thank you for the specimen. It is quite true that bees work on the catkins of the hazel at times.

Suspected Disease.

A. N. (Bristol).—The bees were too messed up with honey to examine.

A. O. (Jedburgh), T. A. M. (Sussex), H. C. (Old Charlton), and C. R. I. (Fleet).—The bees are affected with "Isle of Wight" disease. Destroy at once, burn combs and all internal fittings, debris, &c. The hives themselves may be disinfected by means of a painter's spirit-lamp.

P. E. L. (Ventnor).—The bees were too decomposed for us to properly examine them, but from what little we can see we should say they have died from "Isle of Wight" disease.

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TO CLEAR; secondhand Hives, with rack of Sections, 6s. each; Extractor, 10/-; rack shallow Combs, 4s. 6d.; racks of Sections, 2s.; 12lb. tin Heather-blend Honey, 9s.; Sections, 10s. dozen; Winchester repeating rifle, 30s.—DICKINSON, St. Ives, Ringwood. s 90

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BUFF PLYMOUTH ROCKS, all you can desire; Eggs, 15 3s. 6d., 50 10s., March delivery; Chicks, day old 13 6s., 50 £1, April delivery sharp, book early, supply limited.—J. HOUSEHAM, Huttoft, Alford, Lincs. s 95

Editorial, Notices, &c.

FRUIT GROWERS AND BEES.

A meeting of the National Fruit-Growers Federation was held on February 21st at the Royal Horticultural Hall, Vincent Square, Westminster, the chair being occupied by Mr. H. Martin. The Federation is doing good work and all fruit-growers will do well to join; the secretary is Mr. Oswald B. Cowley, 2, Gray's Inn Place, Gray's Inn, London, W.C. At this meeting the usefulness of the bee to the fruit-grower was brought forward very prominently by Professor Bachhouse in a paper on "Pollination of Fruit Trees and the Importance of Bees." The paper is too long for us to print *in extenso*, and to give extracts would not do it justice; therefore we print a portion of the discussion which followed, which will no doubt be interesting to our readers.

Mr. C. H. Hooper, M.R.A.C., of Wye College, said he knew that some fruit-growers hated bees, but he advised them to keep a few stocks. They might give a hive or two of bees to a labourer or a cottager, and let him have the honey for the trouble of looking after them, and their crops would be all the better for it. Proceeding, Mr. Hooper said, "In 1911 I made some 300 trials in order to get information on the following points: (1) Can fruits set and mature without the visits of hive, humble and other wild bees, &c.? (2) Can fruits set and mature when pollinated with pollen of the same variety or flower? (3) Does fruit set and mature better where the blossoms are pollinated with pollen of another variety?

"In gooseberry, red and black currants, owing to the construction of the flowers and the fact that the pollens are globular and glutinous, like tapioca, the pollen cannot be carried from the anthers to the stigmas without insects, and as there are practically no other insects about, at the time of their being in blossom, than the hive or humble bees, the crop is dependent on these for fertilization, as they will not set fruit unless pollinated, but in these fruits pollen of the same flower or same variety answers perfectly. In strawberries in the field, in sunny weather, the wind appears to be able to carry the pollen over the flower to fertilise the stigmas, though it is probably an advantage to have bees near, especially in flowering seasons which are dull, as when there are only a few minutes' sunshine bees are on the spot to work among the flowers.

"In raspberries and logan berries, the fruit is not generally so large or so well developed if bees are excluded, and one experienced fruit-grower told me he had better results with raspberries with two different varieties in the field than by growing one variety alone.

"In cherries, out of nine varieties tried, none set fruit when insects were excluded from the flowers, and no pollination was done in the case of nine varieties pollinated with their own pollen; none set fruit save the Morello (and possibly Florence), whereas when pollinated with pollen of another variety, each variety set fruit. Each variety of cherry is in flower for about twenty-two days, and is in full flower about the seventh or eighth day. Most varieties are in flower about the same time, the Morello being one of the last to flower. The observations seem to recommend the intermixing of at least two varieties in an orchard alternating them, and to keep plenty of bees in or near the cherry orchard.

"With plums, out of eleven varieties tried, only two matured fruit when not pollinated; five varieties set and matured their fruit when pollinated with pollen of the same variety, but when cross-pollinated nearly all the flowers set and matured good fruit. All varieties (except perhaps Victoria) fruit more plentifully and produce larger fruit with pollen of another variety."

After referring to the pollinization of the different varieties of apples and pears, Mr. Hooper concluded his interesting account of his experiments by again referring to the value of the hive bee as a pollinating agent:

"From careful observations in 1911, I estimate that 80 per cent. of the pollination of our hardy fruits is done by the hive bees, 15 per cent. by the various humble bees, and the remaining 5 per cent. by other wild bees with very small assistance by flies, midges, and beetles; these latter are first, rare early in the year, and secondly, unlike humble and hive bees, they have little or no hair on their bodies to carry the pollen from flower to flower."

Mr. Hooper then referred to the "Isle of Wight" disease among bees and suggested that Parliament should offer a substantial reward to the man who discovered how to prevent and to cure it.

He suggested that in each fruit-growing district, fruit-farmers, in order to encourage the keeping of bees, offer to their workmen and other cottagers a premium of say 2d. per hive of healthy bees kept by them, with a maximum of six hives in one garden. This might get over the difficulty of themselves keeping bees, which involves a good deal of work, knowledge, and a certain amount of pain; they might also encourage bee-keeping by subscribing to the local bee-keepers' association, of which there should be one in every county, with a visiting bee expert. To the help and value of the latter he could bear testimony. A fruit-farmer might, with advantage to him,

self, supply to one of his men hives, bees, and appliances, tell him at which spots to place the hives, and give him the honey as a return for his work with the bees.

Mr. Chittenden and Mr. Cheal having spoken in the discussion which followed, Mr. W. Herrod said it had been a great treat to him to hear the fruit-growers at that meeting praising the bees, as, at one time when he used to visit people in the country he found very few gardeners were fond of them. At one place where he was resident at the time, the gardener was no exception to this rule. One year he remembered was a very bad one for melons, and the crop was practically a failure, with the exception of one house. By some mistake the ventilators in this house had been left open and the bees got in, with the result that that house had the best crop of melons ever grown there, even in a good year. When the matter was put before the gardener he replied, "Well, bees may be all right for melons!" (Laughter.) This accident of leaving the ventilators open, however, showed that bees were also not only good pollinizers of outdoor but also of indoor fruit. He was not a practical fruit-grower, but he watched the industry from the point of view of a bee-keeper. Prof. Bachhouse had mentioned the flight of bees. They knew that bees worked out for about two miles; they could work five or six miles, though this was of rare occurrence; but the professor's remark about bees being kept near the flowers was a very useful one. Bees were affected by climatic conditions; given half an hour's sunshine only, the bee did not have much chance to work, but if the bees were kept close at hand, and there came just a little sunshine, they could get to work upon the flowers immediately. If bee-keeping was followed out on the right lines, bees were very beneficial to both fruit-growers and their owners; with regard to increase in size by cross-pollinization, it had been proved that fruit did increase in size in this way. With regard to "Isle of Wight" disease, it was a most disastrous thing. At the present time there were two scientists working on the disease, and the Government must be given credit for doing its best in the matter. Personally, he was grateful to fruit-growers in different parts of the country, because when the "Isle of Wight" disease broke out they woke up and endeavoured to do something; but before that they thought the bee was robbing them. The result had been that after many years of patient effort the British Bee-keepers' Association had got a grant from the Government to help them to further assist bee-keeping throughout the country. Fruit-growers had no doubt helped bee-keepers to get that grant by insisting that the Government should do something. The point he wanted to make clear was this: they had been talking about bees fertilising flowers, but they all knew quite well that the bee had got a sting, and in consequence of that it was not everyone who would keep bees. He sympathised with people who were afraid of bees. There were bee-keepers who delighted in getting nervous persons stung for fun, but he did not believe in that kind of thing. The suggestion he wanted to make was this: he knew there were plenty of bee-keepers in the country who would be only too glad to place hives in the fruit gardens. He could give the names and addresses of these bee-keepers, or he would work in conjunction with the secretary of the fruit-growers' federation. In this way bee-keepers and fruit-growers throughout the country would benefit. Fruit-growers and bee-keepers must co-operate with each other if they wanted to succeed.

The Chairman said that Mr. Hooper had stated that 80 per cent. of the fertility of fruit was due to the hive bees. Therefore, if bees were going to produce such a startling effect as that, they all ought to have bees in their plantations.

Professor Bachhouse, in reply to a question, said he did not think fruit-growers could depend upon wind-blown pollen, and Mr. Chittenden also said he made a few experiments last spring on wind-blown pollen, and he came to the conclusion that pollen could not be carried more than a few yards by the wind.

The Chairman thanked the gentlemen who had given them information on the subject, and hoped that what had been said would lead to fuller discussion another time.

HELPFUL HINTS FOR NOVICES.

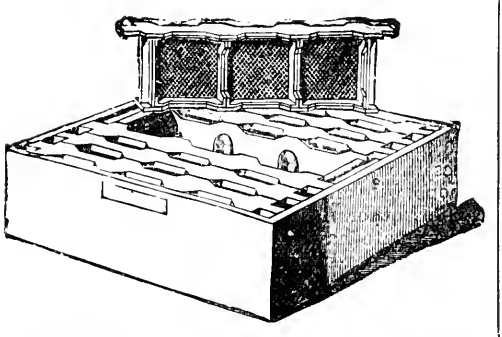
By W. Herrod.

PROCURING SURPLUS.

(Continued from page 73.)

Another rack is the W.B.C. hanging section-rack, which is favoured by many bee-keepers. As will be seen in the illustration of that made by E. H. Taylor, of Welwyn, this rack has the same advantages as the one described last week for working in conjunction with shallow-frame supers, being made to the same size. In this case the sections are fitted into hanging frames, to which is attached the divider. They are all fastened tightly together in the frame by means of a wedge at one end, and the seven frames are wedged firmly in place by means of a dummy with springs, at the back. To prevent the bees getting into the space at the back of this dummy from the underside, $\frac{1}{4}$in. thick pieces of wood $\frac{3}{8}$in. wide should be nailed on the under-

side of the end at which it works. The advantages claimed for this rack are that it keeps the sections quite clean (this is quite true, as they are covered, with the exception of the edges). Also, if it is necessary to move the sections, this can be done quite easily without any sacrifice of bee life. For instance, if the bees have drawn out the sections just in the centre, and we desire to spread the cluster so as to make them work uniformly throughout the rack, then it is quite an easy matter to place a frame of drawn-out sections alternately between those not worked upon. This cannot be done very comfortably with the ordinary rack, as it takes a long time, exposes the bees unnecessarily, and unless we are very careful the lives of a number of bees are sacrificed by crushing. The removal of the sections is quite an easy matter if the frames are made properly. They should be so constructed that when the wedge is removed and the frame turned face down on to a table, the sections slip out quite easily by lifting up the frame.



Probably the greatest drawback is the extra cost involved. If one does not mind this, then the rack is a good one to use.

The next point to consider is the divider. Really the best material for these is wood, as it is warmer than metal, but there are several drawbacks which prevent its use. The divider should be as thin as possible; this prevents propolization, and also enables us to get better sections by the conservation of heat effected. If of wood, they cannot be made thin enough, as they buckle when in use; also they are difficult to clean, as they split very easily. They should be made of zinc, as this does not rust, and therefore can be washed in a disinfectant without injury. The ordinary slotted divider is the one generally used, but with this the top slots are often cut too large, the result being that a row or two of cells just at the top are drawn out too much, sometimes even to such an extent that they protrude beyond the woodwork. For my own part I have found a divider without slots give excellent results. The fence wood-divider is used by some, but unless it is carefully made its use will disfigure the combs, as the bees make ribs across them just opposite the opening in the divider; this, of course, spoils the appearance of the section.

(*To be continued.*)

Work in the Apiary.—The warm weather experienced during the past few days has made the bees very active; they have been working merrily upon hazel, crocus, aconite, and white arabis. Water should be placed in some shady position where the bees have easy access to it. Put in a pinch of salt: the bees will appreciate this. A peep into the brood-nest to see that the food supply is all right is all the interference we should permit ourselves at present. In fact, unless some urgent matter demands it, the brood-chamber should not be opened at all this month; a great deal of harm can be done by a few minutes' exposure too early. The sun may be shining, and the atmosphere feel warm to human beings, who have clothes to protect them, but expose the fragile grub to a breath of wind that has a little nip in it (and the March winds generally have this) and death ensues, not only injuring the colony numerically, but also providing in the chilled brood a suitable breeding ground for the germs of foul brood. Syrup may now be given very slowly to those stocks in need of food, and a fresh supply of naphthaline should be placed in all hives. Repair, disinfect, and paint all hives not occupied by bees.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8387] We are now on the threshold of another bee season. The bees will be about every sunny day, gathering pollen and a little nectar on warm days, and as the breeding season advances they will require water. This, if placed near the hives in some shallow vessel with spent tea-leaves or some cut corks to prevent the bees drowning when taking it, will save a considerable number of bees' lives, especially where the nearest pond or brook is some distance away, and on windy days numbers may get blown down and chilled. Artificial pollen composed of equal parts of pea and wheat flour makes a good sub-

stitute for the natural article; this can be given in a box or old straw skep, sprinkled on a handful of wood shavings, and placed in a sunny position. Where only a few hives are kept, and there is an abundance of flowers, the artificial substitute is not required. Don't neglect to feed if required; a peep at the brood-combs may be taken by turning back one of the corners of the quilt on any day when bees are flying freely, and if the top parts of the combs are full of honey, wrap up again as quickly as possible, lay an open newspaper over the first quilt with warm wraps on top, and contract the entrance to about 2in. This will help to conserve the internal heat of the hive, so necessary for breeding, and also give the colony a better chance to withstand robber bees, as often at this time of the year stocks which run short of food will either rob or be robbed out. Should your bees start robbing put a fine rose on the water-pot and give every hive a good sprinkling. This will quell the disorder quickly. The stock that is being robbed, unless fairly strong, should be united to the next stock. This is the best way of dealing with queenless colonies—unite them to the next stock.

Stimulating should not be started until the end of this month, and do not spring clean your hives, unless we get abnormally warm weather, until April. Bees that are known to have a good supply of food in their hives should be left undisturbed. A stock provided with good food, a good hive, and healthy bees, will, in the course of nature, be quite capable of managing its own affairs for the next month or six weeks.

Don't forget to sow seed of the best hardy bee flowers during the month, and also to place your orders for bee goods likely to be wanted later on. In closing, I would advise young recruits in bee-keeping not to be too anxious to open hives to see how the bees are getting on: this will more often retard than help the stock's progress.—W. Woodley, Beedon, Newbury.

SPRING STIMULATION.

[8388] Time goes apace. The winter is fast passing over, and with the approach of spring, Nature, aroused from her slumbers, will shortly begin anew the cycle of the seasons. Once again the bees, aroused by her promptings and the more genial weather, will commence in earnest the activities of another season. Even now, tempted out by the recurring bursts of sunshine, one may see a by no means small number of worker bees making their way up the alighting-boards with their loads of pollen, gleaned from the expanded crocus blossoms, and betokening the fact that egg-laying has already begun. Bee-keepers will already have taken a retrospect of the past season's work, following which they will have formulated their plans for the future one. Under natural conditions the bees, keeping pace with Nature, would, in addition to supplying their own immediate needs, weather permitting, be able to lay up an adequate store for their use during the ensuing winter, and until such time as outside sources were again available. Under domestication, however, much more is required of them—namely, as large a surplus over and above their own needs as the energy of the bees and the skilful assistance of the bee-keeper can secure.

Several important factors have to be considered by the bee-keeper, one of the first of which is spring stimulation, in order that the bees may be induced to stoke their queens to increased egg-laying, and so rapidly build up the stocks to gathering strength. This stimulation should be timely, and in intimate relationship with the particular flora of the district in which each bee-keeper resides. Failure in this respect will cause many of our plans to miscarry, and disappointment or failure result. Nature has wisely ordained that the blossoming period of the various nectar-producing trees, shrubs, and plants shall vary, according as the necessities of plant life and seasonal conditions will allow, some blossoms opening earlier, others later. Soil, local situation and climate have also an important bearing in this respect. In this country the main sources of nectar are clover, limes, and heather, but in addition to these are a number of other plants which provide a bounteous repast for the bees. Fruit blossoms, field beans, field mustard, are amongst these latter, each of these putting forth their blossoms in their own season. The object of each bee-keeper should be to make himself thoroughly conversant with the particular flora of his own neighbourhood, also the approximate dates of the opening of the blossoms and the commencement of the honey flow, and so to time his efforts at spring stimulation that his bees will be at full gathering strength just as the blossoms open. It is remarkable with what datal regularity these latter appear, year after year. In this district, wherein we are dependent chiefly upon field beans and clover, the dates seldom vary more than three or four days. By referring to the "Guide Book" we find that it takes about six weeks to build up a colony of sufficient strength to take advantage of an early flow of honey. This, therefore, will give each bee-keeper the clue to the approximate date at which the stimulation of his bees should begin. Too soon means colonies of irritable bees chafing at the

absence of nectar; too late means to fall short of surplus in the same measure as he is behindhand. Further, a queen stoked up too early in the season will cease laying relatively earlier in the autumn, and the stock will consequently suffer from a paucity of young bees the following spring. Some stocks may respond more quickly than others, in which case they may spare a frame or two of brood for others more tardy of response. Of course, those bee-keepers who work for early swarms will make their plans accordingly, and commence stimulating at the earliest possible moment. If only bee-keepers would more generally approach the practice of bee-keeping in a thoughtful and systematic way, there would be less heard of poor "takes" and failures, and more satisfaction and success. Ofttimes the bees or the seasons are blamed, instead of which lack of guidance is at fault, and which guidance it is our bounden duty to give, since we share with our bees the fruits of their labours.—J. W. Mason, East Yorks.

ASSOCIATION LOCAL SECRETARIES.

[8389] Will any reader who has had an extended experience of Association secretarial work come forward and give, in the B.B. Journal, his help to one who is doing his best to organise bee-keepers in a district which is sadly disorganised?

The question is how to get the district local secretaries closely in touch with the association on the one hand, and members in their districts on the other? What would be a suitable list of duties to supply to those consenting to act as local secretaries? How can they bring home the Association to the bee-keepers around them although they are many miles distant from the centre of the Association? Should the local secretaries hold meetings in their district, and, if so, what should take place thereat, as the secretaries are not at all competent to give an address on bee-keeping matters?

We have plenty of advantages to offer to members—Association honey labels, reduced cost of insurance and subscription to bee-papers, co-operative buying, half entry fees to Honey Show, advice and visit of expert, &c., but owing to the area being a wide country one, badly served by railways, some of the members feel (and the executive feel it also) that the Association is not a "live" affair to them. The central meetings are not easy of access to the isolated members; hence we are not able to arouse the enthusiasm that way, and it is certain we cannot go out and hold a meeting in each district each year, though we have done a good deal in that direction.

I do not remember seeing this subject before discussed in the "B.B.J." or *Record*, and feel sure there must be other secretaries to whom the subject will be of interest.

Will old hands at organising please come forward? If Associations are not all complete successes it seems to me this is one of their chief failures, viz.: to keep in touch with bee-keepers who cannot attend central meetings.—Campbell R. Pinkney, Joint Hon. Sec., Whitby and N.E. Yorks Bee-keepers' Association.

BEES IN LONDON.

[8390] It may interest your readers to hear how my bees have wintered in London (South Kensington). I examined them to-day (March 3rd) for the first time since last October. They went into winter quarters on ten frames, more or less filled with sealed stores, and a 1lb. cake of candy, which has since been renewed three times: the last occasion was on February 26th.

To-day I found bees enough to fill quite seven frames if packed as tightly as possible, but have left them nine. One frame is three parts covered with sealed brood on both sides; the inner sides of the two adjoining frames were full of eggs. Is it not rather good for a stock to be in such a condition at this time of year on their own initiative, especially in London? [Very satisfactory.—Ed.] They have also got through ½lb. of candy the last four days. During last week the bees have been working hard, most of them flying in the direction of Battersea Park, although a good many go towards Hyde Park and Kensington Gardens.—W. G. Coates.

BEE NOTES FROM ALLAN DALE.

[8391] I made up a baby nucleus hive last summer but it failed in the purpose for which I intended it as it did in the previous year, and for the same reason, the queen passing with ease through the excluder zinc placed over the entrance, so that I was unable to control her flight. She was a young queen that came off with a second swarm from a strong hive, so should have been full sized. Although I failed in my object so far, yet I observed one matter which was of interest to myself and may be to others. I lost a large swarm, but when it went off about a quarter of a pint of bees were apparently left behind, and collected on the old spot where the swarm had clustered. These I put in a baby nucleus hive, thinking they might have a queen with them. They settled down quietly, but I found on examination they had no queen; still, they worked away, and after a time there appeared to be some eggs in the comb, but

the bees dwindled fast. I then added the queen and enough bees from the swarm to fill the little hive. When the young queen found the eggs or larvæ, she crouched on the comb and trumpeted; this she did two or three times, getting more and more excited and finally she rushed out of the hive, the workers all following her, and formed a little cluster near the entrance. I caught her and smeared some honey over her. Again placing her in the hive she was quite quiet after this, and the bees soon all gathered in to her. Shortly afterwards she commenced laying, and the little hive went on all right. From this incident I am inclined to think it may not be so much a case of a hive with a fertile worker being unwilling to receive a queen as that the queen is unwilling to remain in the hive where the fertile worker is, but rushes out in her excitement and is lost, as in such a case the strange workers would not follow her. It would be worth trying the experiment of taking out any combs with eggs or larvæ, then to smear the queen with honey, and so introduce her to the hive.

Isle of Wight Disease.—This fatal malady seems to be spreading on all sides. Is it possible that whilst we have been looking for a solution of this mystery outside the hive it has its origin within? Spraying charlock and fruit trees has been thought by some to possibly be the origin of this pest, but is it not possible that the formic acid bees mix with their honey coming in contact with the metal wire embedded in the foundation produces a verdigris which has a poisonous effect upon the bees, perhaps affecting them more especially under certain climatic conditions? Some might say in reply to this that where there is no wiring of the foundations yet such hives are smitten with the disease. I wonder whether this is a fact? But even if it be so I can quite understand how when once the disease has originated it may be communicated to other bees which are in a low state of vitality. My own bees are suffering this winter very severely from dysentery, owing, I expect, to the long continuance of mild, damp weather. Were they to come in contact with Isle of Wight disease I do not doubt but that they would at once fall victims to it. I understand that verdigris is made in the South of France by placing grape skins between two sheets of copper; it is then scraped off and sold for various commercial purposes.

Bee Legislation.—I cannot but feel a good deal of sympathy with Mr. Woodley; when once a matter passes into the hands of the Government it is difficult to say how it may develop. I think your correspondent who suggests that certain bee-keepers should be exempted from examination by an expert comes pretty near a solution of the difficulty, but surely it would never do for exemption to be based upon the number of hives kept. Some who keep few hives may be as capable even as those who keep many. Would it not be possible for capable men to pass an examination and hold a certificate, which would exempt them from having their hives examined except in such cases as when they themselves desire it? If those holding a certificate were at any time found neglecting to deal with disease, their certificate could be taken away and themselves subject to a penalty as well as to the visits of an expert.—"HUMBLE BEE."

EFFECT OF BEE STINGS.

[8392] I should be grateful if you could spare room in your valuable BEE JOURNAL for the following. On taking up the "B.B.J." for last week I noticed on page 81 an article about a Pastor F. Kutnar who had been immune to bee stings all his life, and for the last three years always had an attack of catarrh when manipulating his hives, and also had a form of eczema as a result of the stings. And, again on page 41, there is another little item about the late Mr. James Heddon, of Dowagiac, Michigan, who was also a bee-keeper on a large scale, and was affected in almost the same way with catarrh and itching sensation in the ears. It seems rather a strange coincidence, that I started bee-keeping in 1910, and it was in that same year that I had slight itchings in my ears, which I found afterwards was eczema, and shortly afterwards an obnoxious discharge started from one ear, which in a few months affected the other ear. I also had severe burning sensations in my head and face. It would interest me to know if any other bee-keeper has been affected the same way. I have twelve stocks in my apiary, and naturally have a few stings now and again, but have never experienced any other ill effects afterwards. I have always thought that my complaint was caused through a severe cold, and perhaps being run down, but reading the account of the two bee-keepers I was rather curious on the subject.—E. W. C., Parkstone, Dorset.

HEATHER HONEY AS FOOD FOR BEES.

[8393] With regard to heather honey as a winter food, I know several bee-keepers on the hills who winter their bees on natural food only, the greater part of which is from heather, and I am convinced that the honey from trees and shrubs (honey dew excepted), is a more beneficial food for the bees owing to the jelly-like substance which it contains, which seems to keep the honey more moist

than honey from charlock or other similar kinds of flowers. Certainly the queen does not start laying so soon as a queen in a low-lying warm district, but that is of no consequence as there are very few early flowers and the honey flow is later. The bees also are stronger on the wing, and more suitable for the rough work than those fed on artificial food. The great point is to winter strong hives only if heather honey is used. With regard to bees that are wintered on this in low lying warm districts, it is quite possible that heather honey and climatic conditions may be opposed to each other, especially if the queen is of an early and prolific laying strain.

Quilts.—I am much interested in the views of correspondents regarding glass "quilts." May I be allowed to mention another which I think is even more useful? Take a piece of soft, close-woven shawl, sofa- or carriage-rug, or thick flannelette—not that with a rough surface, but of a dark colour, which has been washed a few times—cut it into sizes that will cover over the frames. Then take a piece of clean, dark wax, that which is too dark for comb foundation, and warm it before a fire, but do not let it run; have your quilt on a table close at hand, and as soon as the wax melts, rub it on one side of the quilt only. Continue to do this until the quilt is covered with a thin coating of wax. Should the surface be uneven, hold the quilt carefully before a fire, not close enough to let the wax melt too much or it will run into the material and thus be wasted. A feed-hole may then be cut, leaving one side unsevered so that it may be doubled back when in use. In using, put the waxed side downwards over the frames. The advantages of this covering are obvious; when the hive is opened you will never find that the bees have eaten holes in the quilt, neither will they propolise it to the hive, and though adhesive in itself it is easily removed. It will not absorb moisture, it will not break, it will often entice bees into the supers sooner than any other kind by keeping the warmth in the hive, and if kept clean will last many years.—A Regular Reader, Birstwith.

BEE DISEASE AND SKEPPISTS.

[8394] I have noticed from time to time in your Journal that contributors have expressed themselves in favour of the entire abolition of skeps. I, on the other hand, am just about to persuade a neighbour of mine to revert to them, as since his adoption of a frame-hive his stock has been affected with foul brood, and become so weakened that mine, through robbing his, have contracted the disease—so badly indeed that last season I destroyed seven out of twelve stocks, and this season, so far, one. When the man in question kept his bees in skeps his plan was to "take" two skeps one year, leaving two to winter, and assuming that these both swarmed the following year, in the autumn to "take" the other two, leaving the swarms to winter. The combs were thus always fairly new.

I must add that he is ignorant about bees, is afraid of them, and always gets someone else to handle them for him; consequently they are mismanaged and neglected. Would not skeps be more suitable in this man's hands than frame-hives? Should I be right in inducing him to revert to them, or not?

The best plan of all, I admit, would be to educate him, and remove his fear of "our little friends"; but in the first place he is very deaf, and stubborn by nature, while the second difficulty, I am sure, is beyond me.—F. V. W., Gloucestershire.

[The best plan of all would be to persuade him to give up bees altogether, and make him a present of a little honey each year. The bees are just as likely to contract disease in the skep as a frame hive, although there is some advantage in the renewal of the combs.—Ed.]

POROUS *v.* NON-POROUS QUILTS.

[8395] May I add a few lines to the correspondence on this interesting subject? I am only a novice, and had accepted as an article of faith the statement that dry porous quilts are the best covering for bees, but Mr. Dalzell's letter in your issue of January 25th gives subject for thought. Mr. Simmins in "B.B.J." (October 5th) states that loss of wing power (paralysis) may be cured by subjecting the bee to *moist heat* (it would be interesting to learn whether the observations of others confirm this statement). Now it is obvious that the hive atmosphere will be drier with a porous than with a non-porous covering, and, if Mr. Simmins's statement is correct, will predispose the bees to paralysis. This seems to me a side of the question well worth investigation in connection with "Isle of Wight" disease.—W. A. C., Castle Cary.

"ISLE OF WIGHT" DISEASE.

[8396] I remember reading in the British Bee Journal that the Australian bee-keeper Mr. R. Beuhne had stated that he could make no stand against an epidemic of paralysis, until he found a hive of bees which were immune from the disease. Immunity from "Isle of Wight" disease (*i.e.*, breeding from an "immune" variety) is probably the only chance of getting safety from its ravages. Have we as yet any recorded

case of inherent immunity? The disease appears to attack all races and hybrids with fatal effect. If it is the same as *Apis nosema*, we should look to the Continent of Europe for the appearance of the "immune" bee; and if any European bee-keeper has an authenticated case of immunity, we should purchase the stock, or get queens from it for testing in England. We have no central fund for such a purpose, but surely there would be a hearty response to an appeal for funds should a case of immunity be brought before readers of the BRITISH BEE JOURNAL.—JOHN N. KIDD, Stocksfield, Northumberland.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Tall Sections (p. 53).—As a user of these, I must say a word in their favour, particularly as Mr. Herrod's criticism seems to refer solely to the plain variety, the kind I use. This section is $1\frac{3}{8}$in. thick, and correspondingly wider when glazed. If glazed so as to make the most of the base, it is fairly stable, though nothing like so stable as the square section. Instability on the show bench, however, is fairly certain to be the fault of the staging. I have been astonished to see some of the light staging erected. These sections can be shown in cases having a broad base, for they are undoubtedly attractive, and worthy of a place on the bench. The two bee-way variety is about $1\frac{3}{4}$in. wide, and sufficiently stable, no doubt, but the appearance of a plain section when glazed is superior. More care is required in production to ensure that the capping is below the wood all over. The "extra wax" for capping is not a large item. Altogether it is four square inches per section, and this is discounted by the reduction in thickness of comb (at least three-sixteenth inch) and the larger number of outside cells. Some compensation may also be found in their readier adoption and earlier finish. As to their weight, mine often draw 16oz. "three-quarters of a pound" is an estimate very wide of the truth. It may occur, as it does with the square variety, no doubt to compensate for those 18oz. and 19oz. sections!

Glass Quilts (p. 56).—The principal object of these would seem to be the facility for inspection without disturbance. Is this attained if, as by Mr. Bowen, a quilt be placed below, and does such a quilt remain dry and free from mould? But, in any case, what advantage has glass over the flexible celluloid advocated by Mr. W. F. Reid? As to the ruby glass suggested by Mr. Wedmore, would not the bees "see red" and come out prepared to do or die? Would examination at night by the aid of a dark room lamp be equally satisfactory?

The Man or the Hive (p. 56).—The point of Mr. Townshend's pronouncement seems to be missed by our friends, Messrs. Macdonald, Martin, and others. As I understand this, it is not that a good man can produce more honey in a desert than a poor man can do in Paradise, but that, given equal conditions of flora, the good man can produce a better crop with any old hive than the neglectful, or ignorant, with the finest appliances. Such an instance as that cited by Mr. Martin does not conflict with this, for it is based on local conditions. In any case, the MAN was the factor in seeking "pastures new," not the hive. One might as well argue generally the comparative merits of cow-keeper and byre, upon the enforced assumption that the better cowman keeps his cattle in a district unsuited to dairying. Let him be never so good; let his cows be clothed in "the finest silk"; let them sleep in the Savoy Hotel, and be obliged to find their pasture in the Strand, the result will not be, I venture (*sic*) to predict, a success! So with the bee-keeper there must be necessary pasturage for the land to flow with milk and honey, and the lack of pasturage cannot fairly be a factor in such a discussion, any more than it may be said to be, as I was once seriously informed by a dignitary of our craft, a drawback of "bee-keeping." Such a condition is local, not general, and, to be instructive, comparison should properly be confined to single issues.

The Shortened Division Board (p. 57).—If "A. J. C." states correctly that his frames run at right angles to the entrance (*i.e.*, the ends being seen from the front of the hive) is there not a danger in feeding behind the board, as the feed is so near the entrance? A safer place is the rear of the hive. An ordinary division board may be used in this way by the simple device of placing a small block under the lugs. Once more, a "division board" which is "the same size as an ordinary frame" is a dummy comb, and not a division board at all, since it cannot be used for the purpose of division.

Carpet Quilts (p. 64).—I cannot but think that if these were generally tried, bee-keepers would "use no other." I have used them for years, and have found nothing so satisfactory. They are strong, and bear a lot of pulling. They keep their shape. Bees do not worry them with holes. They may be scraped free from burr combs. They are warm and neat, and altogether desirable.

Bait Combs in Supers (p. 66).—Mr. Bowen does not explain how he arranges the brood-combs in extracting supers. Either his brood-combs are shallow, when the manipulation is quite simple, or he

must use two supers. Is this not inconvenient, and at best only a temporary arrangement?

Moving an Apiary (p. 70).—I note the advice to send by goods train, but under some circumstances might it not be better to hire a van which could be attached to a passenger train? The Rev. Sidney Smith, of Wheldrake, York, sends his bees to the moor in this fashion, and the plan appears to have advantages. Extra protection is afforded; speed of travel is increased; jolting is reduced; and the owner can travel by the same train to take charge. Something must, no doubt, depend upon the size of the apiary and the distance to go.

Queries and Replies.

[8292] *Preventing Stings.—Winter Coverings, &c.*—Will you oblige a beginner by throwing some light upon the following: (1) Is there any really efficient cure and preventive of stings? (2) Is it possible to cover up the bees for winter with too many quilts? Having a lot of pieces of carpet I put about six thicknesses of carpet on a hive, and the bees seem to be doing famously. How many thicknesses would be just enough? (3) Have the old-fashioned bell-glasses for extracted honey any points in their favour? One never hears of them nowadays. (4) A friend made me a present of a stock of bees about four months ago. He said that they had sufficient stores for the winter, but I gave them 2lb. of home-made candy for safety's sake. They carried it all down, and also another 5lb. Is this quite right, or is there any danger of the bees being over supplied and so preventing breeding? Shall I supply them with more candy? Thanking you for your very helpful answers to my questions when I last wrote.—Lancastrian Bee, Middleton.

Reply.—(1) You cannot avoid being stung occasionally; proper subjugation and careful handling go a long way to prevent this. The simplest remedy is onion rubbed on the wound after extracting the sting. (2) Three good thick quilts are enough. (3) These are quite out of date; the honey cannot be extracted from them; it is a matter of breaking up the combs. (4) The bees needed the food or they would not have carried it down. Yes, give them some more.

[8293] *Stock Found Dead in Spring.*—Enclosed is a frame with dead bees attached which was taken from my best hive, and I shall be grateful if you will kindly tell me the cause of death. The colony, a splendidly strong one, began the winter in excellent condition—clean hive, plenty of stores, and warmly covered up. The other day when bees from other hives were taking their flight, I noticed that bees from the hive in question were not issuing. Thinking this strange, I determined to investigate. Imagine my horror upon opening the hive to find every bee dead, nearly half of them clinging to the frames, the others in a mass upon the floor-board. All the frames but two contained honey and pollen in plenty. I made a careful search for the queen but failed to find her. This is my third year of bee-keeping, and have never had a similar experience, and do not remember reading of such a case in your valuable little paper, which is of great assistance to me.—G. H. C., Oxon.

Reply.—We gather from the appearance of the comb sent that early last autumn the bees blocked all the cells with food, so preventing the queen from laying. The result being that no young bees were reared for wintering, the old ones left died off during the early part of this year.

[8294] *Bees gathering from forage three miles away.—Queen-rearing.*—(1) I am sending you a bottle of heather honey, and shall be glad of your opinion in "B.B.J." I have sold some at 12s. per doz. (Is that too much?) and made 9s. per doz. on all the ordinary honey. My bees have to go three miles, *in a bee-line*, to get this honey, and some people will not believe that I can get heather honey. (2) How can I make use of the honey that has been separated from the wax in rendering the latter after being pressed in the heather-press? Is it good for bees? If so, how can I give it to them? (3) I have over a dozen stocks, and have been a bee-keeper about ten years, but I know nothing about queen-rearing. Would you advise me to rear queens for so small an apiary? If so, how should I go about it? I have the "Guide Book." I have been told that I should rear queens; that I should get much more honey by doing so. Is there much trouble or expense attached to queen-rearing?—J. W. S., Hereford.

Reply.—(1) The honey you send is not pure heather, but a heather mixture. It is now showing slight signs of fermentation, but when in sound condition it is well worth 12s. per doz. (2) You can use it to make vinegar or mead, or give it back to the bees, first adding water and boiling it until it is the consistency of syrup. (3) Yes, it will pay you to rear queens from your best stocks. Follow the instructions given in the "Guide Book," and you might also read "Queen-rearing in England," by F. W. Sladen. The appliances necessary are inexpensive.

Notices to Correspondents.

S. E. P. (Luton).—*Utilising Old Broodcombs.*—Brush the combs first with a soft brush, then slightly warm them in front of the fire before using.

H. H. (Surrey).—*"Isle of Wight" Disease.*—The disease is of comparatively recent origin; it first made its appearance about five years ago in the Isle of Wight, so it was not known twenty years ago. The bees (which have died from "Isle of Wight" disease) are British.

Suspected Disease.

J. H. H. (Wilts).—The comb contains foul brood.

C. P. (Yorks).—We are very much afraid from an external examination that the trouble is "Isle of Wight" disease. Send some bees to Dr. Malden, Medical Schools, Cambridge, for his report.

F. H. (Haverfordwest).—The comb is affected with foul brood of long standing.

T. H. (Godalming), W. B. (Barrow), A. W. H. (Salisbury), LANCRICK (S. Devon), E. A. B. (Hendon), and A. D. (Cheshire).—The bees show every sign of "Isle of Wight" disease, and it will be well to send a few (alive if possible) to Dr. Malden, Medical Schools, Cambridge, for his report.

F. J. M. (Wokingham).—The hives should be well disinfected by means of a painter's blow-lamp, and the outsides washed with carbolic acid and water. You could commence again, say, with a couple of swarms, standing the hives on fresh ground.

H. F. (Brighton).—The bees are very dry, and so far as we can see there is no disease. The honey left can be safely used for household purposes.

IGNORANT (Warwick) and J. J. D. (Mansfield).—The bees were too dry for us to ascertain cause of death.

J. F. F. (Muswell Hill).—The bees and sample of comb were so saturated with honey that it was impossible to examine. Do not use the combs, but melt them down.

J. K. (Wrexham).—There is very little doubt from what we can see that the bees died of "Isle of Wight" disease. Burn all internal fittings of hive, and well disinfect it inside and out, without delay.

G. W. W. (Surrey).—Bees were too decomposed for examination as to cause of death.

G. A. (Derby).—We much regret to have to report unmistakable signs of "Isle of Wight" disease in the bees sent. We are only too pleased to be of service to our readers at any time, and appreciate your kind remarks very much.

B. HARRIS (Frampton Cotterell).—(1) The bees were affected with black brood. (2) They were not queenless. (3) These are ordinary maggots which feed on putrefying matter. The comb smelt abominably. (4) No, it would not be safe. Burn the combs and everything inside the hives, then well disinfect by means of a painter's blow-lamp.

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FINEST CLOVER HONEY, 28lb. and 56lb. tins, 56s. cwt., screw capped bottles, 7s. 6d. dozen.—L. MEASURES, Tilbrook Grange, Kimbolton. t 17

WANTED, healthy Skep of Bees, cheap.—DAGGER, Crofton, Marlboro', Wilts. t 19

EXCHANGE, 1 Stock Bees, 1911 queen, in almost new Hive, for White Wyandotte or White Orpington Pullets, value 25s.—E. WHITFIELD, 7, Elizabeth-street, Houghton-le-Spring, Durham. t 20

TO BE SOLD March 20th, half mile Ampthill Station, Bees, Hives, and Appliances, by SWAFFIELD, Auctioneers, Ampthill, Beds. t 21

FINEST HEATHER HONEY, sections and screw jars; also Heather Blend.—Price from P. M. RALPH, Settle. t 14

BEES.—Fine, guaranteed healthy stocks old English Bees, on combs, price 35s. and 30s.—F. A. BEAN, Snaith, Yorkshire. t 22

WANTED, Extractor, not geared, good condition, cheap.—PALMER, 26, Kingston, Yeovil. t 24

LINCOLNSHIRE HONEY, 28lb. tins, 56s., 60s. cwt.; sample, 2d.—WILLIAM ABBOTT, Thorpe Bank, Wainfleet. t 26

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

DISEASES OF BEES LEGISLATION.

The following is the text of the proposed Bill for controlling diseases of bees, as drafted by the Committee appointed for the purpose, and now submitted by the courtesy of the Editor to the readers of the BRITISH BEE JOURNAL.

The Committee trust that the draft will be found to meet all reasonable objections, but any further suggestion or criticism will be welcomed by me.

After the consideration of these, the Committee purpose to submit the draft, as amended, to the vote of bee-keepers concerned, when it is hoped that a very definite pronouncement will be obtained.—L. S. CRAWSHAW, Hon. Sec., Diseases of Bees Legislation Committee.

DRAFT OF BILL FOR THE BETTER PREVENTION OF BEE DISEASES.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

I.—In and for the purposes of this Act, the word "infected" means infected with any disease known to affect bees or brood of bees: the word "premises" includes lands and buildings, and the word "hive" includes any receptacle for bees.

II.—(1) Every Local Authority in England, Scotland, and Wales, empowered to execute the "Diseases of Animals Act, 1894," shall execute and enforce the provisions of this Act within the area of that Authority, and the expression "Local Authority" shall be construed accordingly.

(2) A Local Authority may (without prejudice to their powers of delegation under any other Act) resolve that the provisions of the Fourth Schedule to the "Diseases of Animals Act, 1894," relating to the Committees of Local Authorities, shall apply for the purposes of this Act, and thereupon the said provisions shall apply accordingly.

(3) Any expenses incurred by a Local Authority in the execution of this Act shall be defrayed in the same manner as the expenses of such Local Authority under the "Diseases of Animals Act."

III.—(1) For the purpose of executing and enforcing the provisions of this Act, a Local Authority shall authorise annually a qualified person or qualified persons to execute the powers exercisable by authorised certificated bee experts, or certificated instructors in beekeeping under this Act.

(2) Any such authorisation shall be sufficient if made by warrant in the form in the schedule in this Act or in a form to the like effect purporting to be signed by the Clerk of the Local Authority, without being sealed, and shall not be subject to any stamp duty.

(3) Any such warrant shall extend to the whole or to such part as shall be therein specified of the area of the Local Authority, and shall continue in force for the period therein limited, but may at any time be revoked by the Local Authority.

IV.—(1) An authorised bee-expert or instructor in bee-keeping under this Act shall have the following powers and duties:—(*a*) He may enter any premises whereon he may have reasonable grounds for supposing that disease exists, or has existed, after reasonable notice has been given of his intention to do so, and may examine, or may cause to be examined by the owner, or his deputy, any stock or colony of bees, or product of bees, or any hive or appliance for bees which he may find thereon, and may take samples of any infected bees, combs, or product of bees. (*b*) He may place any infected apiary under quarantine, and prohibit the sale or removal of bees, hives, and appliances until such time as he shall be satisfied that the said apiary is free from disease. (*c*) He shall exercise and perform such powers and duties as may be prescribed by bye-laws of the Local Authority.

(2) The owner may attend the examination, and, if he so desires, he or his deputy may perform the actual manipulation to the satisfaction of the inspector.

(3) Any person who obstructs any authorised bee-expert or instructor in bee-keeping in the exercise of his powers shall be liable to a fine not exceeding two pounds.

V.—(1) A Local Authority shall make bye-laws:—(*a*) For prescribing the mode of notification of the existence of bee-disease to be given to the Local Authority. (*b*) For prescribing and enforcing the isolation and treatment of infected colonies or products of bees. (*c*) For prescribing and regulating the destruction of any colony of bees, and of any infected hive or appliance for bees. (*d*) For prescribing and enforcing the cleansing and disinfection of hives or other appliances for bees. (*e*) Generally for the better prevention of bee-diseases.

(2) Such bye-laws may impose penalties not exceeding in any case

five pounds for any breach of them, and shall be of no effect unless and until confirmed in England, Scotland, and Wales by the Board of Agriculture and Fisheries, but shall not require confirmation by any other authority.

(3) Any bye-laws of a Local Authority may be proved by the production of a copy of the bye-law purporting to be certified by the Clerk of the Local Authority as a true copy, and a bye-law so proved shall be taken to have been duly made unless and until the contrary is proved.

VI.—When a person having in his charge any bees, hive, or hives, or appliances, has become aware that such bees, hive or hives or appliances are or is infected, he shall forthwith give notice in writing thereof to the Local Authority; and if he fails to give such notice he shall be liable to a fine not exceeding, for the first offence, two pounds, and for the second or any subsequent offence five pounds.

VII.—Any person who knowingly removes from his premises, or sells or disposes of to any other person, any infected bees, or any infected hive, or brood combs used therein, or any infected appliance for bees, shall be liable to a fine not exceeding for the first offence two pounds, and for the second or any subsequent offence five pounds.

VIII.—All offenders under this Act, or any bye-law under this Act, may be prosecuted, and fines may be recovered by a Local Authority in a summary manner as provided by the Summary Jurisdiction Acts.

IX.—This Act may be cited as "The Bee-Diseases Prevention Act, 1912."

B.B.K.A. ANNUAL MEETING.

The annual meeting and half-yearly conversazione of the association will be held on Thursday, March 21, at the Lecture Hall, Zoological Gardens, Regent's Park (nearest station, Camden Town, Hampstead Tube). The annual meeting, for members only, will commence at 4 p.m., and the conversazione will follow at 5.30. All interested in bee-keeping are cordially invited to attend the latter, and the Council hope that members will bring friends with them. Light refreshments will, as usual, be provided, and a most interesting evening is promised, the subjects for discussion being "Heatner Honey," introduced by Captain F. Sitwell, and "Forty Years of Apicultural Progress," by Mr. D. M. Macdonald, the well-known Scottish writer on bees, who is familiarly known to bee-keepers as "D. M. M." It is hoped that a large number of bee-keepers and others will be able to attend.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of February, 1912, was £1,934.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

AMONG THE BEES.

By D. M. Macdonald, Banff.

PITFALLS BESETTING THE PATH OF THE NOVICE.

The beginner often little knows on what a thorny path he treads along his journey in Beedom. Pitfalls are plentiful, and the novice too frequently is down in the depths before he realises that dangers were imminent. One of the most frequent of those first encountered is "plunging" at the very start. Text books counsel beginners to *hasten slowly*, and no better advice could be given to the starter in the race after "wealth" expected to be derived from the labours of the bees. It is best to start with even one hive, and then gradually work up in numbers, as experience teaches him the art of managing the few successfully, in order that he may make the many a full success.

Very often the novice starts bee-keeping without even the most elementary notions of apiculture, or if he has some imaginary knowledge of bees and their ways it is of that kind which the poet has characterised as "a dangerous thing." That he may not fall into this slough he should be advised to get one or more good text books, and read up all he can on *practical* bee-keeping, leaving theory and other branches to be acquired at greater leisure. Such a knowledge acquired thus, and from information imparted by bee-keepers of long experience, who slowly trod the path right up from their own novitiate days to the veteran stage, at once places these seekers after knowledge and truth firmly on the first rung of the ladder which leads up to success.

Undue interference with the bees, either in the early days of spring or during the season of active honey-gathering, tends to work evil and not good. The beginner is keen for information, and that is well, but to acquire it, he should not be continually pulling the brood-nest to pieces. In my early days, indeed during the greater part of my apiarian life, I kept one or more hives set apart for investigations, and rarely received any return from them. A gardener never pulls up a favourite plant to see the roots and thereby judge of its progress; he judges by what he sees. When the novice perceives from outside observation that bees are prospering, then he should leave the interior management

to the bees. "Hands off!" should be his motto.

He has read of the wonders performed by spring stimulation, and therefore with the very dawn of that season he has "an itching palm" eager to pull the hive to pieces, view the interior, and start stimulative feeding in order to strengthen his forces. Therefrom arises far too frequently "balled" queens, chilled brood, and, as a consequential result, spring dwindling. April is a month of "smiles and tears," the latter frequently predominating. Many years "Winter lingers on the lap of May." Even although the forces have been obtained, nectar forgets to secrete, or the weather forbids all foraging; then the last state of that stock is worse than the first. Its very strength may prove its undoing, because with such a powerful force there is a run on stores which drains the combs dry.

What is known in this country as "spreading the brood"—in America it is euphemistically called "jumping frames"—is a favourite pastime with many, and the novice has a sneaking fondness for it. In settled weather and in experienced hands it may work wonders, but it is a pitfall—a plunge into which is accompanied with ruinous consequences when practised by the novice. So much is this the case that most of the latest editions of our bee-books have wisely dropped all mention of the method. The beginner should be urged to let it alone entirely, and even the old hand, for his own good, should be advised to resort to it but seldom.

The novice loves to see a large number of hives in his apiary at an early stage; he would like to be considered a bee-farmer. More bees is not so much his craze as more hives. This is the greatest fallacy! The total surplus take at the end of the season does not depend so much on the number of bee-hives in his apiary, as on the number of bees in each hive. Indeed, it should be preached in season and out of season that one strong stock is generally worth more, and yields more surplus, than three or four weak or even medium ones. Therefore, a beeman's wealth does not result from possessing mere numbers. More bees if you like, better bees if you can, but above all have more bees in every hive. "Keep your stocks strong!" should be the watchword, motto, and business rule.

The desire to purchase goods cheap is rather a vice of the age. Bee-keepers are often bitten by the craze, forgetful that "cheap" goods are frequently dear at any price. The novice notes an advertisement of second-hand appliances offered at a very low price, and invests in them, generally to find that they are much deteriorated, out of date, of odd shapes and sizes, and sometimes they prove rather a hindrance than a help to successful manipulation; and in the case of hives, often bees don't thrive in them. Then there is the chance that disease may lurk in their crevices, in which case the pitfall leads to a very slough of despond.

What novice has not, sometime in his career, had an irresistible craving for the foreign element in the shape of a queen from some other country than his own? This pit is open and manifest, yet what an innumerable company fall yearly into its depths, unwarned by the experiences of those who have gone before them. The result is too often contrary to all fond anticipation, and in general it leads to poorer bees, softer bees, irritable bees—and the general consequence is that our country is flooded with a lot of mongrels; neither Blacks, Carniolans, nor Italians. Seldom does cross-breeding produce the several virtues of these fine races; but generally their vices are not only reproduced but highly intensified, to the great detriment of our calling.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NON-POROUS v. ABSORBENT COVERS.

[8397] Will you allow me to comment on the references and answer the questions that have appeared on this subject in the last few numbers?

"D.M.M." (page 63) dismisses the matter in, if I may say so, a somewhat contemptuous fashion. Glass covers (I accept your correction; they ought not properly to be called quilts) have, in his opinion, "been weighed in the balance and found wanting." "D.M.M." has "found them for various reasons," which, however, he refrains from giving, "a nuisance," and he would pity the large apiarist who had to use them. Now, if "D.M.M." will forgive the suggestion, had he, out of the wealth of his experience, enumerated a few of the reasons which induced him to discard them, it would have been of great service to those of us who are earnestly seeking light on the question. He might, in particular, have given us the evidence on which he bases

his belief that the trend of opinion in America is markedly progressing towards faith in the (porous) quilt. The facts he does mention go to show, so far as one can judge, that American bee-keepers, admittedly the most go-ahead and the least conservative of apiarists, discarded the porous quilt forty years ago, and took to sealed covers because, I submit, they realised that bees preferred them, and that in a country with extremes of temperature far exceeding ours, both in winter and summer.

Mr. Woodley (page 64) and the Editors (page 67), refer to the use of glass covers so far back as 1865 and 1879, but no reasons are given for their discontinuance, except, so far as one can judge, because fashion changed.

I accept "H.L.M.'s" correction (page 64) with gratitude. I ought to have said "reason for the hope that is in you." I hate to misquote.

The experience of "J.D.A." (page 67), apparently, quite coincides with my own, as regards convenience, freedom from breakage, and the preference of bees for non-porous covers.

Mr. A. H. Bowen (page 55) strongly supports the view that bees do their best to make the cover of the brood-chamber non-porous. He seems to give a somewhat excessive entrance, viz., 16in. I only give a 5in. or 6in. opening.

In answer to "W.P." (page 85), the only dampness I have found is occasionally at the extreme corners of the glass covers, where the moisture collects, in winter, in shallow drops, which, so far as I judge, never grow large enough to drop, and, in the spring, gradually diminish and disappear.

Mr. A. W. Rigler's letter is very interesting. A glass cover could be made by his method much more cheaply than by mine; four strips of glass, two 15½in. by 6in. and two 6in. by 6in., could easily be fitted into a 1in. frame, 16½in. by 17in. in such a way as to leave a 3in. square hole in the centre for feeding purposes; this opening to be covered by a 5in. square. The total cost should be less than 6d. if the glass has to be bought from and cut by a glazier, but if one can use either a diamond or an American glass-cutter the cost ought not to exceed 4d. There is the drawback, however, that there would be a space of about 3in. by ⅛in. on each side of the square opening—a space almost too large to propolise.

Lastly, "W.R.T." has a fling at the glass cover. "Nothing but a nuisance" he should call it. He wants a bendable quilt that will roll back, and he instances the helping of a weak stock by the removal of a frame of brood from a strong hive in spring. He does not seem to have tried a glass cover. Had he done so, he might have found that, with one, his job might actually be simpler and easier than with a bendable, but opaque, quilt. For instance, he could, by inspection, without removal or disturbance, select the frame of brood in the strong hive which he required for the weak stock. All that would then be necessary would be to *slide* the glass cover off the frames sideways sufficiently far to enable him to take out the selected frame, remove it and slide the cover back. There would be no necessity to lift the "whole show" off the hive. Does "W.R.T.," though, seriously mean that a glass cover is just as bad as a skep for manipulation? Why, even "D.M.M." admits, grudgingly, it is true, that glass covers "are very nice in some ways." I hope that when "W.R.T." has actually tried a glass cover he will give us the benefit of his experiences.—J. G. Dalzell.

ODDS AND ENDS, AND SCRAPS.

[8398] *Our Bee Journal.*—As I am domiciled within the Metropolitan area, Wednesday evening's post usually brings the welcome visitor. Possibly there are other readers, who, like myself, as soon as it is received, insert the paper knife under the wrapper. But, for the moment I stay my hand. This is my hour of calm. I fain would have nothing to disturb by peaceful mind. I have enjoyed my dinner, and I would rather see everything *au couleur de rose* (mine enemy might say *au couleur de vin*), and above all, I must consider my digestion. Therefore, I avoid anything to irritate or to disturb. Deliberately do I scan the "Contents" that I may know how to avoid the evil and select the good.

Perhaps "Contents" is hardly the right word. Let us call it the Bill of Fare, the Menu, which is offered. First, there are the usual side dishes, "Reviews of Foreign Journals" and "Reviews of the Meetings of our British Associations." Very interesting, for choice the former. From these we can gather many very useful hints. But they are merely appetizers, little trifles to tempt further indulgence. The real *pieces de resistance*, the solid joints, may be found in the Correspondence. We are here regaled occasionally with high scientific articles on the current topics of the day concerning bee-keeping, and we hail with pleasure, also, frequently and regularly, under this chapter, the contributions of several talented writers. Art finds representation, in half-page visions of the homes wherein the honey-bee doth dwell, and of the proprietor thereof, and sometimes even poetry is perpetrated. But alas, even as in all banquets, there are morsels which are indigestible, and it is to avoid these, lest they rack me as a nightmare, that as I

have said, I stay my hand. For instance, are not the greater part of your readers sick unto death of the everlasting arguments on Foul Brood Legislation. It would seem as if some were afflicted with *cacoethes scribendi*, an itch for writing, a disease which compels to write, and being so constrained can find nothing else to write about but foul brood. Is there anything to be said on this subject which is unsaid? I trow not. Is there a single reason for, or against, which has not been advanced at least fifty times? We all know that the British Bee-keepers' Association has in hand, and will very shortly present, a Bill in Parliament to deal with this disease. Stay until you see the draft of it, and if it does not satisfy, then "slate" it as much as you will.

And there still is wanting the sweets to complete the *plat de jour*, or, to speak more precisely, *semaine*. Shall we not find these in the Queries and Replies, to the beginners, *bon bouches* of special information confected at their own request, and for their special benefit. To the older hands delicious recollections of when we too were young—and foolish. Well do I remember my own first appearance in the Queries and Replies column many years ago. I had foul brood in a hive, and at that time knew it not. Almost with nervousness I presented my frame of brood for the inspection of the late Mr. W. B. Carr, hoping against hope that I was mistaken. It was so bad that it merited a notice in the "Replies." But from that hour and that courteous interview, I date my interest in the science.

Bee Experts and Spring Cleaning.—With the advent of the "crocus-fires," as, if I rightly recollect, Keats calls them, and the snowy arabis, the county secretary commences to consider the spring tour, and it very often happens that at the same time the "gude-wife" begins to organise her spring cleaning too. The revolution of two such events in the domestic orbit means a crash, and a collision, and the results of such a shock, both in the celestial and the terrestrial sphere are meteorolites and electric sparks. Now may the expert win renown. Now may he show his virtue. There be some whose courage would ooze out at their fingers' end, but dare to be brave and maintain your ground. She is a woman, and she may be won. Try not the frontal attack. Her eloquence will out-match thine. There is a flank movement which seldom fails. It is an artifice used by Eve, a weapon from her own armoury. Would you have it expressed in Shakespeare's words:

"Flatter and praise, commend and extol
their graces,"
(*Two Gentlemen of Verona.*)

always in a tactful and discreet fashion. Don't swish it on as with a lime-wash brush, or plaster it on as with a trowel. That would be clumsy indeed. No! Wait your opportunity, and it will soon come, then, with a word or two, well chosen and deftly expressed, you may stem the torrent of her wrath. List to Lord Chesterfield writing to his son, "Have you not found out that every woman is infallibly to be gained by every sort of flattery, and every man by one sort or another?" And he was a shrewd observer.

"Now though in that fashion
The sweet breath of flattery may conquer
strife,"
(*Comedy of Errors.*)

with the mistress, with the master it must be flattery "of one sort or another," and there is no more graceful or seductive way than by permitting others to believe that they are superior to you in wisdom. Therefore, though you may be as cram full of apiarian knowledge as the Bee Journal, yet permit your subscriber to think he can give you "points." Don't be too fond of talking. Let him talk and you listen.

The success of a county association depends to a very great extent on its expert. If an expert knows his work, is courteous, obliging, and industrious, he will do good work for his county. And there is one more point. In every county there are brothers in the craft, well educated, refined men, and the most eager often. It is pleasant, if the representative of the association can meet them on somewhat equal grounds, and if invited to join the family circle at dinner or in the evening, he has sufficient of *bon ton* and polish to correctly conduct himself and possibly interest and entertain.—J. Smallwood.

IMMUNITY FROM DISEASE.

[8399].—As one whose bees have suffered from the still increasing "Isle of Wight" disease, I am pleased to find that J. N. Kidd (page 97) has voiced the opinion I have long held, viz., that instead of bee-keepers doctoring their stocks with various lotions, disinfectants, &c., progress should be along the line of endeavouring to obtain an immune strain of bees.

Should any of my stocks survive this spring, I shall incline to the belief that they may be thought reasonably "proof," for I have had the disease raging in my apiary since last autumn. Should all my bees perish I hope to obtain fresh stocks from an apiarist who has "pulled through" the scourge.

I should be pleased to hear of or from any bee-keeper in the "Isle of Wight"

who can guarantee that his present existing bees have lived through a serious visitation of the epidemic. To successfully ward off disease man endeavours to render himself immune from infection, and the same theory holds good regarding bees. Instead of medicine for every microbe known, we need an organism in which the microbe cannot thrive.—G. Foster, Hants.

HEATHER HONEY AS A WINTER FOOD.

[8400] In reply to "W.P." (p. 84), let me first of all repeat my statement that bees have not (to quote J. Dalzell) "for thousands of years been accustomed in their wild state to have a covering *absolutely impervious*." This holds good whether we are dealing with ground dwellers or with such as live in hollow trees—no tree defective enough to be "hollow" and form a dwelling place for a colony of bees is "absolutely impervious" above the cluster. Moreover, the "entrance" in such a case must be such as to make any comparison with modern hive conditions quite incompetent.

Now as to "W.P.'s" criticism regarding heather honey, I must first say that I consider him a biassed critic. He misquotes me; or rather he puts his own interpretation on my words and then gives his interpretation as if it were my statement. He then proceeds to put questions, throwing the onus of proof on me while making his proof involve a dissertation on the chemistry of heather honey and a statement of disaster among my colonies. All this is very unfair. And this is not all, for he proceeds to support his own side of the question by quoting an unauthenticated statement of an unknown, unnamed "correspondent in 'B.B.J.,'" who according to "W. P.," calls heather honey the "ideal winter food."

May I, in return, quote some eminent American writers on the subject of an ideal winter food?

Holterman says of sugar syrup: "No better stores can be provided for bees during winter confinement."

Hutchinson says: "a good thick syrup made from granulated sugar is an ideal winter food, whether it be sealed over or not." Again in "Advanced Bee Culture," p. 173, he enters fully into the reasons why sugar is better than "natural" stores, and says: "Repeated experiments have proved beyond a doubt that, as a winter food for bees, cane sugar has no superior. With this as an exclusive diet, bees never die with the dysentery."

Alexander says: "Now with sugar syrup there is no foreign substance. It is practically all digested, and the bees come from their winter quarters dry and clean. This one advantage derived from sugar syrup of itself alone would far more than pay for the trouble of late fall feeding." He quotes another apiarist as feeding 1,500 to 2,000 colonies with syrup as being "better and safer."

Root's "A.B.C.," Quinby, and, if my memory serves me rightly, Simmins, all prefer sugar to fall honey.

Root actually proved by repeated experiments that the food value of sugar syrup is greater than the food value of honey in the proportion of 14lb. to 18lb. of honey to 7lb. of syrup. "Bees wintered on honey consumed 14lb. to 18lb. Bees wintered on syrup consumed 7lb."

Finally, if "W.P." will take it on my testimony, I repeat myself and condemn heather honey as a winter food.

Let me quote this winter's experience: I had 45 colonies in my home apiary (two old queens), and six colonies in one outapiary; while a friend (D. H.) had eight colonies (seven young queens). In my six lots five had young queens. At the backend, as I had no time to attend to my bees, my friend very generously undertook to do this for me. I indicated my policy, viz., "Take away every ounce of heather honey not in combs containing brood or pollen." He criticised this policy freely, but did it in respect of the 45 lot apiary, but not in respect of his own eight or of my six lots, of which latter he reported that they were in perfect condition, and had so much honey stored that I could easily take away 20lb. and yet leave them plenty. I did not take away this 20lb. His own lots were in first-class condition; in fact, he was specially pleased with them. Time still pressed me, and I did not get my 45 lot fed up. D. H. prephesied disaster. I certainly feared it, as undoubtedly the bees were short of food. Result, forty-three have wintered and are very strong; only those with the old queens have died out. So much for the 45 lot apiary. Before January, D. H. had lost four of his eight stocks, since then I do not know how many more; while all my six stocks are reported dead.

"W. P." and others can draw their own conclusions, but I believe I could go on to the filling of a weekly edition with cases and incidents. But to what purpose? He wants to know how I feed up so many colonies. Well, certainly not with the pottering feeders one buys. I have my own hive, my own feeder, and I can feed 100 colonies as quickly as the syrup will run out of an inch nozzle. (I do not mean feed them for the night, but feed them solid for the whole winter.) Also, I can "pack" my hives for transport to the heather in one minute, and I can put 108 of them in one railway waggon, and all this without the use of a single tool. But this is another story.—T. D. N. (Lanarks).

HEATHER HONEY AS A WINTER FOOD

[8401] I was surprised to read the statement of "T.D.N." (page 47), with reference to heather honey not being a suitable winter food for bees.

In response to "W.P." (Blanchland) (page 84), and your invitation in the first number of this year's journal, I send a short account of my experience in this matter. I may say that I have kept bees for over thirty years, and have taken the "B.B.J." for more than twenty of them. During that time I have been located in the Furness district (Lancashire), also in Cumberland, and in several places in Northumberland, all of them heather districts, and, from my experience, my opinion always has been, and now is, that heather honey is the best winter food for bees.

I have had bees in well over a dozen frame-hives as well as boxes of most kinds and skeps of various shapes and sizes (I once had a skep which, when brought home from the moors, weighed 7st.), and in all these the same lesson was taught me—that heather honey is the best winter food for bees. I always consider that if I do not get any sections filled, the honey stored in brood-combs amply pays for the expense and trouble in taking the bees to the moors, as it makes them safe for the winter, and I always allow them to keep the ten frames in the brood-chamber without disturbing them. I have taken fourteen frame-hives a distance of over twenty miles to the moors.

As a proof that heather honey is a good winter food for bees—and in this you will think with me, that I have been fortunate—I have never had a stock of bees die out; never had foul brood in any of my hives, or even dysentery to any extent, and no other disease—the chief reasons I give for this immunity being clean hives, frequent renewal of combs, and heather honey for winter food.

The much-abused skep I consider the best home for health and comfort of the bee, only it does not enable the bee-keeper to use the bees and their produce to his own advantage as much as the frame-hive does. It will be a matter for regret if the time ever comes when the skep by law, as a house for the bee, is a thing of the past. I have no bees at present, yet I get the "B.B.J." every week and read it with almost as much pleasure as if I were in the midst of an apiary with the sweetest music to a bee-keeper resounding in my ears. I enjoy reading the experiences of others, and have learned much therefrom, and I hope in the near future to again be a bee-keeper.—C.B., Northumberland.

A BEE FLOWER.

[8402] An advertisement in an agricultural paper this week of Cistas (Rock Rose), at fifty plants for 6d., leads me to refer to its use as a bee flower. Last year I saw it grown side by side with *Alyssum Saxatile* in about equal proportions. The bees loaded themselves with pollen from its blossoms, while the Alyssum was virtually ignored. I cannot vouch for the quantity of nectar it afforded, but that it was produced was apparent. It is an evergreen perennial, making good, tidy growth, and bearing very pretty flowers from June to August. It is easily reproduced by natural layers, rooted where the outside pieces come in contact with the soil. I was certainly struck with its beauty and utility, and have secured plants for flowering this season.—G.S., Bisley.

RANDOM JOTTINGS.

By Chas. H. Heap, Reading.

LEGISLATION WANTED TO STAMP OUT DISEASE.

"Isle of Wight" disease is making its unwelcome presence felt in South Berkshire and South Oxfordshire. Whole apiaries are being exterminated, and I doubt whether to the south of Reading more stocks will be left than can be counted on the fingers of one hand. The trouble began in the latter part of last summer, and it has spread to an unexpected extent. Heavy losses have occurred at Caversham and the country beyond, and I fear that hereabouts years will elapse before profitable bee-keeping is again possible, unless science or legislature, or the two combined come to our aid.

Disease Spreading while we Wait.—We know that a special committee of the British Bee-keepers' Association has been appointed to consider the subject of bee diseases, and that eminent bacteriologists are working, at the instigation of the Board of Agriculture, not only to discover the cause of "Isle of Wight" disease, but to find, if possible, a remedy. I do not doubt that science will achieve a notable triumph in this direction as it has done in others; but unfortunately no man knows how long we may have to wait for that triumph. Six years have elapsed since the mysterious disease began to carry off the bees in the Isle of Wight. Six or even more years may pass by before a remedy is found. What is to be done in the meantime is a question of paramount importance. The subject has been discussed until, with our present knowledge, it is threadbare. Meanwhile, the disease is spreading all over the land, and from the correspondence which has appeared in the B.B.J. during the past six months I think if the editor were to give us another map, showing the distribution of the disease, we should find very few light

patches upon it indeed. Under "Notices to Correspondents," I have watched, with concern, the ever-increasing number of paragraphs headed "Suspected Disease." The unpleasant pronouncement "foul brood" is not so often seen, but the dread words, "'Isle of Wight' disease" take its place.

Legislative Action Needed.—Many fanciful theories are set forth, but most of the theorists who get their ideas into print do not appear to realise that the disease which is robbing us of our industrious little workers is caused by a specific germ. Where this germ originally came from nobody, I think, knows. It may have been in the world for thousands of years, but has only just reached a stage in its evolution which has enabled it to prey upon the bee. This is a digression. The point we have to consider is what can be done to stem this flood of disease which is destined to make bee-keeping a lost industry, and also to have disastrous effects on the fruit crops. Obviously, we cannot wait for the triumph of the scientist, and the search for an immune bee would be impracticable, if not futile. There is one remedy which, with the help of intelligent bee-keepers, could be applied with success. That remedy is legislative action. Rinderpest and foot-and-mouth disease among cattle, glanders and parasitic mange among horses, scab and foot rot among sheep, and fever among swine are all the subject of legislative enactments. Is our industry of less importance to us than that of raising cattle, sheep and pigs to the farmer? Why then should we not have the assistance of Parliament to enable us to carry on our work, which is of far greater importance than the general public, a large part of the agricultural population and even thousands of bee-keepers, suspect. I am looking forward anxiously to the publication of the British Bee-keepers' promised Bee-pest Bill. I know that some big bee-keepers hold up their hands in horror at the thought of legislative control; but I fail to see, from what I know of State interference in similar directions, what there is to fear. The large bee-keepers may say that they have nothing to gain from legislation with regard to bee diseases; but I am convinced that in the present circumstances they stand to lose heavily without it. Foul brood may by the skilful apiarian be kept at bay; but where is the man who can keep "Isle of Wight" disease from his apiary and cure it when it gets there. This disease comes like a thief in the night. Robbing is the great disseminator of foul brood; but from what I have seen of "Isle of Wight" disease, robbing is only a minor factor in its dissemination.

The Way to Create Legislative Opinion.—Big bee-keepers, as well as little bee-keepers, will benefit by reasonable, well thought out legislation, and I strongly advise all bee-keepers to do their utmost to focus attention on the subject in the proper quarters. Every bee-keeper who loses a stock of bees will do well to write to the gentleman who represents him in Parliament, mentioning the losses he and neighbouring bee-keepers have suffered, and urging that the State should do something to protect the industry. This will materially help the British Bee-keepers' Association's Bill when it is introduced to Parliament. I have already written to five members of the House of Commons, two of whom are Ministers of the Crown.

Queries and Replies.

[8295] *Comb-building from Foundation.*—Two bee-keepers have had an argument on the question of foundation, and especially on the statements on page 66, "Guide Book" (nineteenth edition). One (A) says that bees are able to draw out cells from foundation without any added material, while the other (B) contends that the foundation is only a guide for the bees to work upon, and that they must either have nectar or syrup to build the cells out, and quotes page 113 for his authority. Which is right? Suppose we take it that your verdict is in favour of A's supposition, then B asks why when built upon very dark foundation in summer all the cells are white?—EMLYNIAN.

REPLY.—Both are right. If the foundation given is thick, *i.e.*, seven sheets to the pound, then there is sufficient wax to draw out the cells; but if thin foundation is used, *i.e.*, ten sheets to the pound, then there is not sufficient wax to draw out the entire cell, but more must be added by the bees. The white appearance is accounted for by the extreme thinness of the cell walls. If you melt down cappings which are apparently quite white, a primrose yellow colour will be obtained in the bulk.

[8296] *Dealing with Suspected Disease.*—I have five hives of bees. One gave no honey last season; from the other four I took two racks of sections each. I had a peep at them the other day. The four I took honey from have abundant stores; the weak one is in bad condition. I have given it candy, but the bees are not swarming on it as they generally do when feeding. Sometimes they come to the entrance, and begin fanning or making a loud buzzing noise with their wings. Last Sunday all the stocks were

carrying in pollen, the weak one included. (1) Can I make a thorough inspection of the weak hive now? (2) Or should I take out a frame near the centre, and if there is any suspicion of disease, might I thoroughly disinfect it and send it to you for confirmation and advice? All feeders and section racks are stored together; so (3) if there is any disease, would plunging these articles in boiling water with a strong disinfective afterwards make them safe for use again? I have five empty hives which I have thoroughly cleaned and painted, into which I intend shifting all bees in May.—A. R. B., Forfarshire.

Reply.—(1) If you are suspicious, examine on a very warm day. (2) If you think there is anything wrong with the brood cut out a piece of comb containing brood about 3in. square, pack in a tin box, and send to us, when we will report upon it. (3) The best way to disinfect is to scorch with a painter's blow-lamp.

[8297] *Early Stimulation.*—(1) I have a stock of British Goldens and one of English Blacks. Could I now put a second brood chamber on top of the "Goldens" containing six or seven frames of foundation, feeding gently, and applying artificial warmth on cold nights (such as a hot brick rolled up on top), and later on insert a frame with starters only? (2) Would drone cells be drawn out in these, and if eggs are laid therein could I remove them and give them to my stock of Blacks to hatch out, as I do not like the idea of queens and drones hatched in same hive? (3) I use bottle feeders. How many holes should I allow now? Would three or four be enough.—Freesia, Surrey.

Reply.—(1) It is much too early to put on extra chambers; the very earliest that this should be done is May. (2) You can obtain drone-comb by using drone base foundation. The eggs could be obtained in one hive and given to the other by inserting a frame fitted with drone base foundation into the centre of the brood nest, when the colony is very strong. (3) A couple of holes will be sufficient for the present.

[8298] *Using a Swarm-catcher.*—As a reader of the B.B.J., I would be glad of a reply to the following questions:—(1) Is phenyle for medicating syrup as effective as Napthol Beta? (2) In an 8-frame swarm-catcher (*a*) What is the best angle for the excluder; (*b*) What should be the size of the opening leading from the excluder to the upper chamber; (*c*) Should the frames be placed over this opening or a space of 2in. allowed?

I know of six colonies in trees, two of which are diseased. All bees in trees and roofs of houses ought to be condemned under the proposed Bill, unless they are under the supervision of an experienced bee-keeper or expert.—W. W. R., Dunster.

Reply.—(1) It is better to use Napthol Beta. (2) (*a*) An angle of 45 degrees; (*b*) About three-quarters of an inch; (*c*) There is no need to leave a space, as the natural spacing of the frames with metal ends will allow a free passage for the bees.

[8299] *Removing Colony from a Chimney.*—I shall be much obliged if you will give me your advice on the following in the "B.B.J.": A neighbour has told me that a stock of bees is situated in a bedroom chimney in his house, and that I am welcome to the lot if I can remove them. It seems that some time last year a bag was placed up the chimney to prevent draught, and that when removing it, no sooner had they loosened one corner of the sacking than down came a crowd of bees. The material was quickly replaced and has not been touched since, and I am told that the bees are still there in great numbers. When will be the best time to remove the colony? Moreover, considering that the distance between our houses is only about a quarter of a mile, is there any fear of the bees returning to their old home when once I have secured them? I propose to act as follows: Blow a little smoke round each corner of the sack and then carefully lower it down to the grate. After securing the bees leave them to quieten down, and then cover them up with the exception of a small wired space to admit air. After which I shall take them to their new quarters, place the combs at one side of the brood-chamber, then close up with a dummy of queen excluder, after having previously caught the queen and placed her on new foundation on the other side of the dummy. As the young bees hatch out from the old combs I shall gradually fill up with fresh foundation. Will you be so good as to tell me if, as far as you can judge from my description, I shall be acting correctly?—E. N. P., Manchester.

Reply.—Your method of operating will be right, except that you must not put the queen on the other side of the excluder dummy, unless you want her to be starved to death. Tie the combs into frames and put these into the hive, then gradually weed them out by putting one frame at a time filled with a full sheet of foundation in the centre of the tied-in ones. This should only be done when all the combs are covered with bees and the previous sheet of foundation is built out into comb and has brood in it. In tying in the combs only keep those having brood, and the operation can be carried out on a fine warm day in March or April. The bees will locate their new home at that time of the year.

WEATHER REPORTS.

BARNWOOD, GLOUCESTER,
February, 1912.

Rainfall, 2·37in. in 20 days.

Above average, ·85in.

Heaviest fall, ·65in. on 12th.

Total to date, 6·03in.

Aboveaverage,2·71in.

Mean maximum temperature, 48·9; 3·9 above average.

Warmest day, ·60, 28th.

Mean minimum temperature, 37·3.

Coldest night, ·12, 2nd.

Mean temperature, 43·1; 2·1 above average.

Relative humidity, 84°.

Sky completely overcast on 14 days at 9 a.m. Cloudless on 2.

Percentage of cloud, 75.

Prevailing winds, S.W. and S.E.

Percentage of wind force, 33.

Barometer, daily mean, 29·65; highest, 30·16 on 28th; lowest, 28·91 on 8th.

Remarks.—A month of mixed weather, like Feb., 1911, of good omen for the season to come. Bees flying on nearly every day after the thaw set in on the 6th.

F. H. Fowler (F. R. Met. Soc.)

Notices to Correspondents.

H. A. D. (Hartfield).—*Loss of Stocks.*—It is very difficult to say what was the cause of death. Certainly it would not be on account of adopting modern methods. You should start again in the spring with a swarm, and when you can manage one or two hives properly, then increase your apiary. Your experience only shows that cheap articles are often the dearest in the end. Had you commenced with proper hives and swarms you would not have had all this trouble and loss.

P. H. J. (Glos.).—*Insurance Scheme.*—Forms for insurance for 1912 can be had on application to the Secretary, B.B.K.A., 23, Bedford Street, Strand.

J. D. A. (Somerset).—*Spring-feeding.*—It will be early enough to commence to work the bees down in April. You might begin now to feed them with syrup, if they require food, but from what you say we should think they have sufficient for the present.

Suspected Disease.

A. P. H. (Leicester).—From external signs, we should say that they have died from "Isle of Wight" disease. If you would like a further report, send some live bees to Dr. Malden, Medical Schools, Cambridge.

Honey Samples.

F. P. (Ipswich).—Both honeys have been gathered mainly from clover, and are worth 56s. to 60s. per cwt.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

EXCHANGE pair Bramble Finches, 4s. 6d., for Dissectible Model of Queen Bee.—STEBBINGS, Hilborough, Norfolk. t 34

FOUR STRONG STOCKS (1911 Queens) and Hives (2 Baldwins).—LITTLE WARLEY RECTORY, Brentwood, Essex. t 35

GIVING UP BEES.—5 Stocks, 19 Hives (6 absolutely new), Honey Extractor, quantity Section Racks, Foundation, Queen Excluders, Sections, Frames, Bottles, &c., suit beginner, £11 lot.—HOLMAN, East Hoathly, Sussex. t 36

2 STOCKS, in W.B.C. Hives, 25s. each.—DRAKE, Seaforth-avenue, New Malden. t 37

QUANTITY of Bee Appliances on sale, 12s. the lot.—BROOKFIELD, 104, Sefton-street, Southport. t 38

10 STOCKS BEES, crates, 58 drawn shallow Frames, gross unused Frames, Dividers, Excluders, Porter escape on board, Cowan Extractor, used two seasons, Strainer, about 9lb. Weed Foundation, 1½lb. Old English ditto, going abroad; what offer, or particulars?—J. STAPLETON, Ivy Cottage, Colworth, Sharnbrook, Beds. t 40

FOR SALE, 40lb. good quality Honey, in 1lb. jars, 7d. each, carriage paid.—A. S. WOOD, Yowchurch, Hereford. t 39

WANTED, Cowan's Extractor, in good order.—A. W. BRUNWIN, Gt. Bardfield, Braintree. t 41

WANTED, 21s. or offers Bees, &c., for 1d. slot Kalloscope, cost £4 10s.—HOULDEN, Yeadon. t 42

WANTED, several strong healthy Stocks of Bees.—Full particulars to MOORE, 14, Albany-road, West Ealing.

FOR SALE, four 28lb. tins of medium coloured Honey, on rail Barnack, sample 2d.—TRUSS, Ufford, Stamford. t 45

LADY (29), experienced with Bees, poultry, gardening, would give services to lady for summer months on Apiary, Poultry Farm, or Market Garden, in return for open-air life.—E., c/o "B.B.J." Office, 23, Bedford-st, Strand, W.C. t 46

2 DOZEN SECTIONS, 7s. dozen; 3 dozen, darker, 6s. dozen; 3 7½lb. tins, 3s. 6d. each.—GEORGE SAUNDERS, 22, Oakley Lodge, near Eye, Suffolk. t 47

QUANTITY BEE APPLIANCES for quick disposal cheap; state wants.—RANDALL, Winchmore Hill Station. t 48

56LB. CLOVER HONEY, rather dark, £1 5s., free tin, free on rail.—IRELAND, Vernham. t 49

HONEY, white granulated, in 1lb. metal capped jars, 8s. 6d. per dozen.—HALL, Mount Lodge, Borstal, Rochester. t 50

5 HIVES for 25s., excellent condition, 3 zinc roofed.—WARD, Gomshall, Guildford. t 51

7 STRONG STOCKS, in W.B.C. Body, on 10 Frames, headed by 1911 Queens, guaranteed healthy; stamp for particulars, 20s. each.—J. YOUNGER, 21, Mackenzie-rd, Cambridge. t 51

Editorial, Notices, &c.

DISEASES OF BEES LEGISLATION.

Owing to the continuance of "Isle of Wight" disease, and the number of cases brought to the notice of the Board of Agriculture and Fisheries, the President is considering proposals for legislation, and with the object of finding a common basis of agreement a conference was held at the Board of Agriculture and Fisheries on Tuesday, March 12th, when Mr. T. W. Cowan, chairman B.B.K.A., and Mr. W. Herrod, secretary, attended. All other interests were represented by delegates.

The Bill, as drafted by the "Diseases of Bees Legislation Committee" of the British Beekeepers' Association, was submitted and considered. Various objections raised by some of those present were overcome and a common basis of agreement was unanimously arrived at, to be submitted to the President of the Board of Agriculture, upon which legislation can be carried out.

DISEASES OF BEES LEGISLATION COMMITTEE.

A meeting of the above Committee will be held in the offices of the BRITISH BEE JOURNAL at 2 p.m. on Thursday, March 21st, 1912.—L. S. CRAWSHAW, Hon. Secretary.

LANCASHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting of the above association was held at the Preston Scientific Society's Hall on February 21st, Dr. Anderton, Chairman of the Executive Committee, being in the chair. The report, which shows a satisfactory increase in the number of members, was taken as read. The Hon. Treasurer, Mr. F. H. Taylor, presented the balance sheet, which shows that the association is in a sound financial position. The Chairman, in moving the adoption of the report and balance sheet, said he congratulated the association on its healthy condition, financially and otherwise; also on the fact that there was a large decrease in the number and seriousness of foul brood cases. Dr. Anderton spoke in appreciation of the whole-hearted services of Mrs. Long, local Hon. Sec., Newton in Cartmel, who in one season had doubled the membership, and commended her example to other local Hon. Secretaries. Mr. Wildman seconded, and its adoption was carried unanimously. Mr. Bold spoke of the danger of "Isle of Wight" disease, which seems imminent; and it is to be hoped that *any* bee-keeper, who suspects his bees to be suffering from this terrible disease, will at once communicate with the Hon. Secretary.

The following were elected officers for 1912-13: President, Mr. E. B. Dawson, Aldcliffe Hall, Lancaster; Chairman, Dr. Anderton; Vice-Chairman, Mr. Geo. Roberts; Hon. Treasurer and Hon. Librarian, Mr. F. H. Taylor; Hon. Sec., Mr. W. H. Martin, Thurston Lea, Southport. The Committee were re-elected. Votes of thanks were passed to the Committee and officers for their services during the past year, and also to the Preston Scientific Society for the use of the rooms.

During the evening Mr. F. H. Taylor delivered a most interesting lecture on "The Habits and Instincts of the Honey Bee," illustrated by lantern slides; it is impossible to give a report, but those members who were absent missed a great treat. Mr. Shackleton, Burnley, proposed a vote of thanks to Mr. Taylor, which was carried. This terminated the proceedings. W. H. MARTIN, Hon. Sec.

MIDDLESEX BEE-KEEPERS' ASSOCIATION.

The annual general meeting of the above was held at 23, Bedford Street, Strand, London, W.C., on February 29th, when a goodly number of members were present.

The report and balance-sheet was presented and passed. The Association commences the year clear of debt, which is most satisfactory. The membership has decreased somewhat, owing, no doubt, to the prevalence of "Isle of Wight" disease, though a number of those who have lost their bees through this scourge have expressed their intention of commencing again.

Mr. J. Smallwood has undertaken the duties of Expert, and no doubt, with his usual energy, will be the means of greatly increasing the membership during the coming season.

The officers were re-elected with several additions to the Committee.

After the business meeting the Hon. Secretary gave a lantern lecture on "A year's work in the Apiary," which was listened to with interest. At the close of the lecture numerous questions were answered by the lecturer, after which a vote of thanks was passed with acclamation, to which he briefly responded.

The meeting was brought to a close with a cordial vote of thanks to Mr. T. W. Cowan for kindly allowing the Association to use his room for its meetings, and to Mr. W. Herrod for his services as Hon. Secretary.—*Communicated.*

DEATH OF MR. W. TYRER, J.P.

The Lancashire B.K.A. has lost, by the death of Mr. Wm. Tyrer, of Prescot, one of its most enthusiastic and influential members. Mr. Tyrer was a prominent figure in the public and social life of the district in which he lived. He was born at Prescot, where he in later life followed the profession of a solicitor, being appointed a magistrate in 1892. An enthusiastic horticulturist and bee-keeper, Mr. Tyrer was the means of promoting bee-keeping among his neighbours of all classes, and materially aided the Lancashire B.K.A., of which he was one of the original members, by his liberality and keenness in working for the welfare of the Association. He will be much missed by bee-keepers in the county.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

PROCURING SURPLUS.

(*Continued from page* 93.)

As already pointed out when producing extracted honey, the longer it remains on the hive the better it will ripen. With sections, the case is different; if they remain on too long the bees thicken the cappings. An examination of sealed sections that have been allowed to remain on the hive too long will enable the novice to see this fault very distinctly. Such sections will travel without much risk of damage, as the cappings are strong and not likely to crack with the jarring, which is bound to occur during their transit by rail, but for selling purposes they are rather unsightly, and the epicure will refuse to purchase such sections on account of the excessive amount of wax they contain.

The sections should not be removed in odd numbers when sealed, but when a fair number is completed in a rack, it should be cleared with the "Porter" escape, and as pointed out previously, the unfinished ones from several racks may all be placed together in one rack, to make a complete super to place on a stock requiring more room.

When a hive is being worked for the production of both comb and extracted honey, the section-rack should be placed on first, so that it can be lifted up and the shallow-frame super placed underneath. In this way the cappings of the sections are not travel-stained by the feet of the multitude of bees passing to the upper super. After removal, the sections should be stored away until required for customers. I prefer to defer cleaning them as late as possible for this reason. When first taken from the hive the propolis is very soft and sticky, which makes the work uncomfortable and tedious, but when hardened propolis is quite easily removed by scraping with a very sharp knife or piece of glass. To make the sections stand firm it is necessary to remove the propolis and pieces of brace-comb from the underside. Sections should be stored in a warm, dry, dark cupboard until required so as to prevent granulation, and should not be glazed until just before they are sent out.

If the bee-keeper has plenty of shallow-frame supers to storify the hives the extracting of the honey can be carried out at one operation. This is much better than having several sticky messes and repeated cleaning of the appliances used in the process.

The honey should be first graded into light, medium, and dark. This can be done by holding the combs up to the light. The combs can then be extracted in their respective batches, and the honey kept separate. This is very necessary if the best prices are to be obtained for the produce. An indiscriminate mixing of all kinds of honey is a mistake; the result very often being honey of only medium quality, which is difficult to sell and can only be disposed of at a low price; whereas, if grading is carried out, the best honey will sell for a good price, and the second grades can be sold at a lower figure. The total sum thus realised will be much greater than if grading is not carried out, thus amply repaying the bee-keeper for the extra trouble involved.

The extracting should be done in a warm, bee-proof room. A good-sized dish or other receptacle for the reception of the cappings is necessary, also a couple of long-bladed, sharp knives, and a deep jug filled with hot water. The purchase of a couple of knives for the purpose is advisable, though carving knives can be used, the W.B.C., with its bent end which prevents digging in too deeply, being the best for the purpose. The bent portion is also useful to remove cappings from small hollows in the combs which will sometimes occur. A cloth to wipe the knives upon should also be provided, and this should be laid on the right-hand side of the receptacle for the cappings. Place the knives in the hot water, and when warmed through work can be commenced. Take a comb, rear it end up on the dish with the top bar towards the operator, lean the top slightly forward and commence to cut from the bottom with a see-saw motion. The inclination of the comb will allow the cappings to drop clear from the face of the comb. The cappings should be cut as thinly as possible, and with practice it will be possible to remove them with very little honey adhering, by cutting through the air-space which exists between the honey and the capping. The cappings should be cut off in an entire equal sheet so that the

combs are kept perfectly straight. The other side is then treated in a similar manner and the knife replaced in the water, the second one being used for the next comb, and so on. When the knife is removed from the water it should be wiped on the cloth before using, to remove the water, otherwise the constant addition of only a few drops of water to the honey will spoil its density. The combs are then placed in the cage of the extractor in such a position that when revolved the top bar leads. As the cells have an upward inclination, the honey leaves the comb much more easily when placed in this position. Do not make the revolutions too quick at first, for as the combs are heavy they may break down. I prefer extracting a portion of the honey from both sides by slow turning first, then repeating the process quickly enough to remove the remainder of the honey. After extracting, the honey should be strained and stored in 28lb. air-tight lever-lid tins until required. They are the handiest size, for, if the honey is sold in bulk, four go to the cwt., packing very neatly in a case, and if it is necessary to liquefy the honey they are more convenient to deal with than the larger sizes.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE BEE DISEASES BILL.

WHAT CONSTITUTES AN INFECTED COLONY?

[8403] I have read the proposed Bee Diseases Bill in this week's "B.B.J." The Committee are to be congratulated upon having overcome some serious difficulties. Giving power to local authorities to make bye-laws and to decide how they are to be carried out is excellent, not because the conditions in one county are likely to require different regulations from those in another, but because bye-laws can be altered to suit the requirements of the industry as experience teaches, and this is the true road of progress.

But there is a point that, in my opinion, ought to be made clear. This is: What constitutes an infected colony within the meaning of the Bill?

With "Isle of Wight" disease, of which, happily, I have had no experience, the symptoms appear to be fairly easy to recognise, and the disease is extremely likely to spread rapidly and work great havoc, so that in the interests, both of the bee-keeper and his neighbours in the craft, it is plain that the earliest sign, or even suspicion, of the disease, should be notified and dealt with.

But with foul brood of the odourless variety, of which I had considerable experience ten to fifteen years ago, the case is different. A summary of my experience will illustrate my point.

A sudden outbreak of the disease occurred in my apiary in one of the nineties in May, traced to the apiary of a neighbour, who kindly destroyed his infected stock at once. Out of my sixty colonies, about thirty showed diseased larvæ, but the majority of them contained no more than a dozen or two. I fed with naphthol-beta syrup until the honey-flow commenced, and destroyed ten of the colonies that got worse. The disease had practically disappeared in July. But in the following spring it broke out again, though much less extensively, only about ten colonies being affected, and only two or three bad enough to destroy. To make a long story short, the disease re-appeared each succeeding spring for four or five years, but with diminishing severity (ignoring occasional spurts) and in so slight a form, that with hardly any treatment beyond feeding with medicated syrup, the brood became healthy. So that, as far as I can remember, I did not have to destroy more than two or three more colonies during the whole period of five years. I might add that colonies were destroyed as soon as it was seen that the disease was seen to have got a fair hold of them, and that thorough disinfection was practised.

In examining the apiaries of others in different places, I have, in May, frequently discovered one or two, perhaps half-a-dozen, sick and dying larvæ in a hive, and often in apiaries otherwise perfectly healthy. The same stocks examined in July generally showed no trace of diseased larvæ, but sometimes one would be found to be badly diseased.

Many experts say that a stock is not diseased if it contains only one or two dying larvæ. For the purpose of a Bee Disease Act I should agree with them, but, scientifically, I believe such stocks to be suffering from incipient foul brood, and I make this statement as the result of having followed the weekly, sometimes daily, progress of hundreds of incipient cases, less than five per cent. of which ever got worse.

The conclusions that my experience with odourless foul brood pointed to were, (1) that slight cases of the disease are extremely common, and generally recover quickly without treatment, (2) that the microbes (*Bacillus burri*) causing the dis-

ease are far more prevalent and less easily got rid of in apiaries than is generally supposed, and (3) that a healthy larva is highly resistant to the disease; the chief danger lies in a large number of them getting affected, either through there being a number of spores in the combs, as the result of a previous attack, or through robbing from diseased hives.

An Act to compel the destruction of badly diseased stocks by destroying them at dusk, burying the remains and disinfecting the hives immediately afterwards, would be a boon to bee-keepers, but I have little hope that an Act will be of much use for treatment, and none whatever that it will stamp out foul brood in this country, where not only is the disease endemic, but there are numerous small bee-keepers, a considerable number of whom do not understand the treatment of bee diseases, and might do more harm than good by exposing infected matter were they to attempt it, though it is encouraging to contemplate the undoubted fact that the proportion of ignorant and careless bee-keepers to the enlightened is less to-day than it ever was before.—F. W. L. Sladen (Member of a former Foul-Brood Committee of the B.B.K.A.), Ripple Court Apiary, Dover.—March 16.

[8404] I have read over and over again the draft of proposed Bee Diseases Prevention Bill, published in last week's "B.B.J." and as far as I can understand, among other things in the Bill, is this: Supposing I should find disease in one or more of my hives when packing up to send to the moors, I must send written notice to the police-station, and as a result receive a visit from a certificated expert, who examines, and, if he thinks fit, puts my bees in quarantine. Or, supposing while the bees are on the moors, the said expert prying about, or getting a hint somehow, discovers disease in hives adjoining mine, and puts the whole lot in quarantine! Truly, a nice state of affairs, with a remedy a thousand times worse than the disease. I voted against the last proposed Bill, and will have much satisfaction in doing the same for this one.—J. M. B., Alnwick.

NOTES BY THE WAY.

[8405] I expect the pages of the Journal will be full of opinions on the proposed Bee Diseases Bill as drafted on page 101 in your issue of last week. First let me plead for a postponement of any measure containing compulsory powers for dealing with bees. The terrible scourge known as "Isle of Wight" disease is in our midst in Southern England, and any possible means of its propagation through inspectors visiting apiary after apiary would at the present time be a crime against our craft. I hear of the "Isle of Wight" disease as still rampant on the southern side of the range of Hampshire Hills and in the east end of Berks, *i.e.*, Windsor district. I contend that travelling experts and inspectors are powerless to deal with this disease, except to do that which any ordinary bee-keeper can himself do—make a fire of the hive and its contents. At the present time county experts should not be sent into any district in which the "Isle of Wight" disease is known to exist except at the request of the member of the association, and if he finds the disease in an apiary he should not, under any circumstances, call to inspect other apiaries.

We have it on high authority that no remedy or cure has been discovered; even our expert-in-chief has not been able to save any part of the apiary at Swanley; every colony has died out.

Those bee-keepers' associations who are sending out their experts for spring tours should impress on them the great danger they will have to contend with in any district in which the "Isle of Wight" disease has shown itself, and according to the replies in the correspondence columns in "B.B.J." week after week it is spreading by leaps and bounds without the assistance of an army of germ-carrying experts to distribute the disease to every apiary belonging to the members of the association. I would not allow a bee expert *on tour among bees* to handle a colony of mine for a ten pound note. As regards the draft of the Bill, page 101, I will defer any reference till another occasion.

I notice in the *Review* that the New York Department of Agriculture has been asked, in the interest of bee-keepers, to take steps to investigate the "Isle of Wight" disease, so in the near future we may have some of their professors over here, as they do not think it wise to import the disease for investigation. Another interesting item was to ask the Department of Agriculture to experiment in producing red clover with shorter corolla tubes. Professor Weber, Department of Plant Breeding, College of Agriculture, Ithaca, New York, states that he believes such a thing could be easily accomplished. Farmers in this district plant much larger breadths of red clover than they (or their fathers) did twenty-five years ago. This is useless to bees.

The continued wet, mild weather prevents work in the apiary, but every time the sun breaks out for a short time, thousands of bees are very busy on the artificial pollen baskets and the few flowers in bloom, but the forage is extending and the palm is in full bloom, long before

Palm Sunday; even the little white flowers of the chickweed are covered with bees.—W. Woodley, Beedon, Newbury.

INSURANCE.

[8406] Many folk are embittered against the bee because she has a sting and is not loth to use it. If Nature has provided this little insect with a tongue to collect the nectar from the flowers, and tells her to store it as a provision against the time when no bee can work, so she has also provided her with a weapon wherewith to defend it. Suppose for a moment the bee had not been so armed how Nature would have stultified herself. Every miserable blue-bottle, fly, spider, or wasp, on robbing bent, would have had the whole store at its mercy; not only has Nature enabled the bee to protect herself, but she has given her also reckless courage, so that even large animals hold her very much in respect. Never considering the dimensions of her enemy, she goes for it. She knows the value of getting in the first blow.

"Thrice is he blest, who has his quarrel just,
But four times he who gets his blow in fust,"

as an American poet sings.

Heaven help you if you are the object of her affection!. Her ardour is so burning, that willy-nilly she will have you. Speak not to me of the human eye causing the fiercest animal to quail; that is the very object she goes for and should she strike home—

"Be proud of your swollen eye,
It is not the fact that you're licked that counts,
It's how did you fight, and why."

Quadrupeds, or bipeds, feathered or unfeathered, it is all the same to the bee. If only they threaten her home and honey, that is sufficient to excite her wrath. But she *does* seem to have an antipathy to horses and dogs—possibly caused by some odour emanating from them which much offends the organs of smell existing in her antennæ, and it not infrequently happens that the formic acid pumped into the wounds by the serrated darts of her sting has fatal effects on the animals mentioned. It only matters to you, if the victims are your own, but should they happen to belong to a neighbour who is, perhaps, not remarkable for his sweetness of temper, why then, the affair becomes decidedly interesting in more ways than one, for you may be quite sure he will intervene to avenge the slaughter of his innocents.

The drama (or tragedy if you will) opens with a scene on the boundary of your mutual territories. The atmosphere threatens storms; chief characters, your neighbour and yourself; dialogue, brisk, short, and sharp; you fail to agree on the minimum wage (damage, I beg pardon), and war is declared.

In the next act you receive a polite note from his lawyers, intimating that Mr. So-and-So, "our client," has received damage to the value of £30 caused by your bees stinging his horses, dogs, or poultry, and that, in default of your remitting the same within three days, they are instructed to commence proceedings for the recovery of said damages with costs. Your man of business advises you to resist the claim, and consequently you receive a very firm demand to attend the County Court, held at a neighbouring town. Sleep flies from your pillow; restless and anxious in the calm, small hours of the night, you wish your bees were in a far-off country and use naughty words about them. But the fatal day approaches. You are dragged before the judge, cross-examined, and browbeaten by the opposing counsel, simpered at by the jury, and, finally, mulcted in the full amount of damages, plus an additional amount to pay for the entertainment you have afforded, both to the lawyers on the other side and on your own.

Now the fame of your exploit, of course, travels into the next town and in due course, comes to the ears of a chum of yours, who also is an owner of hives and a beekeeper (there is much difference between the two), who is a member of your county bee-keepers' association. He is a good hearted fellow and comes to console you. His ideas of consolation are rather peculiar. He cures pain with mustard-plasters, a system of medicine possibly very correct, and which has many advocates. It is, however, the reverse of pleasant. His opening greeting is: "I say, old fellow, what an ass you are! Why did you not insure against damage done by your bees, and the Bee-Keepers' Insurance Association would have paid in the same way that they have already paid a claim for me."

If he had given you this information before your little contretemps with your agreeable neighbour, you might have stood him a good dinner, taken him to "The Miracle," or done something for him "beastly jolly," as my boys used to say when at school, but to pile up the agony in this fashion was adding insult to injury and you could have massacred him on the spot, but your better feelings prevailed, for you remembered that he was an "auld acquaintance" and you decided to spare his life on the condition that he gave you all information about Insurance of Bees. Now this, by the kind permission of the Editor, I propose to tell you in an article next week, and let you know how it is managed at "Lloyds."—J. Smallwood.

GLASS COVERINGS.

[8407] I am interested in what you are publishing about glass quilts. I have used them on my six hives for several years, with the result that my bees and myself are on the best of terms. The glass, as I use it on the top of the ten frames, is in three pieces, each piece, 16in. by 5in., laid over the frames with thin strips of wood 2in. wide by ¼in. thick under the ends of the glass, thereby giving the bees ¼in. clear space all over the top of the frames. Over the glass I put plenty of (old flannel) quilts. If I want to examine a frame or two at any time I remove that piece of glass over them only, perhaps with the help of a knife.

Feeding is done from underneath the floor-board.

The pleasure there is in getting a peep at what is going on inside the hive at any time (just now, for instance), by just removing the quilts and wiping away a little dust, amply repays one for the little extra trouble and expense they cause.—W. C. H., South Devon.

NOVICES AND BEE-KEEPING.

[8408] I have read the article in last week's "B.B.J." (page 102), by D. M. Macdonald, Banff, and quite agree with him with respect to undue interference with bees, and think his advice to novices excellent. This is my fourth season as a bee-keeper, and I have been very successful. When I hive a swarm I prepare the hive with ten frames with full sheets of foundation, then place a row of four or five twigs across the top of the body-box, perpendicular to the entrance, in order to afford tunnels for the bees to pass over the tops of the frames and prevent jamming. I find I can hive a swarm much quicker by providing these passageways at the top. When all the bees are in, I pull the twigs from underneath the quilt. I feed swarms for a fortnight, before placing a super on. I never use the dummy-board for contracting the hive, for I find when bees know they have plenty of room they work frantically and multiply prodigiously. I find a dummy-board practically useless. Even for wintering I never contract the hive, for when all the foundation is drawn out by the bees there is quite little enough air-space in a hive. Again, I never touch a body-box except when putting the excluder on and taking it off. I estimate the strength of my colonies by putting my ear to the hives in the evening when the bees are all inside, or by giving the hive a tap which sets them all buzzing—one soon knows. I can also tell, almost to a day, when a hive is going to swarm by the excitement inside. Then the question may be asked, if I do not examine the body-box, how do I know whether there are enough stores for the winter? The weight of the hive will soon tell, but I give each hive a 1lb. cake of candy every fortnight from the middle of November to the end of March. Stores or no stores, this saves their supply for the spring; they then soon fill their brood-chamber, having consumed little of their stores during the winter, and up they go quite early into the supers. Last year I placed section racks on 1st May, and they were immediately occupied. I have said I stop giving candy at the end of March, but of course if April is cold or wet I give a little syrup.

With regard to non-porous v. absorbent covers, considering there is sufficient moisture caused by the breath of the bees to melt the candy, ventilation is absolutely necessary for health. Sometimes the quilts will become damp with the vapour and have to be dried. Some writers say the bees render a quilt non-absorbent with propolis, but I find they only glue the quilt to the top of each frame—the space between is not touched. Glass or glazed quilts are against all the common principles of ventilation. I may say again that I keep thick quilts over the supers, for I find it keeps the sun's rays off and the hives cool in summer. During the past hot summer I had hives in the blazing sun all day, and no combs were melted. To keep bees healthy, avoid damp, as it makes the pollen mouldy, and do not place hives too low on the ground or the floor-boards will get damp. With regard to spreading brood, rearing queens, and all such operations, I do not take the trouble. My motto is "Hands off!" and leave the bees to Nature; don't irritate them by examining their brood-chamber, and perhaps destroying their eyesight with too much smoke. I may state I have nine hives, and gave a swarm to a cottager last year, on condition that he made a hive. He made an excellent one, from my instructions, out of grocer's boxes. I have made four myself out of these boxes. I find they do not require dove-tailing, as the wood is always so well seasoned. I can knock one up in two days.—Rector, Ashford.

A WORD FOR THE STRAW SKEP.

[8409] Bees in skeps have been more or less under my notice for fifty years, and in all that time I have never seen a diseased skep. This I attribute to the fact that they are not interfered with. Weak lots are very often starved if left over to winter, but that is not a disease.

The danger, I think, lies with meddlesome, slovenly, unscientific frame-hive owners, and if chilling, rotting and starving will induce disease, there you have it with queenless hives robbing and wax moth to boot. I look on skeps as the reserve

force, and frames as the moneyed force in bee-keeping, and should be sorry to see the skep removed. I would rather hear the music from the skeps in the corner than no music at all, which would be the case with the cottager.—T. NEWMAN.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Hive Shape (p. 74).—Those of my colonies which have wintered the best were housed in one hive section of shallow frames. I lost one only of these, through the depredations of mice, but the others are a picture of strength. Does this conflict with Mr. Soal's criticism of the "long shallow type"?

Bee-keepers and Legislation (p. 76).—It will be seen from the published text (p. 101) that the abolition of skeps and the exemption of certain bee-keepers form no part of the proposals of the legislation committee. Whatever the future may hold, it is generally felt that the time is not ripe for the former, and some of the hardships to the industry that would ensue from such restriction have already been indicated in these pages. The second proposition is probably unworkable. In practice, an inspector would no doubt deal with extreme cases such as the one outlined, but that is a very different thing from the abolition of well-kept skeps. And a reasonable inspector will certainly exercise his discretion in dealing with a capable beeman. It must, however, be clear that legislative proposals should be general and not selective in their operation.

Heather Honey as Winter Food (p. 84).—There is clearly a difference of opinion, and possibly of fact, on the subject of the unsuitability of this honey as a winter ration. I must own to being one of the doubters, and "D.M.M." has already reproved me severely for my unbelief. I have been so far willing to modify my opinion as to admit that heather honey may be all right in certain winters following certain autumns, and possibly in certain localities. Now comes "T.D.N." with his uncompromising attitude, and I for one am very anxious to hear further evidence. It is to be hoped that the point will be dealt with in the discussion upon Captain Sitwell's paper at the conversazione this week.

Glass Quilts (p. 85).—This drawing, presumably by Mr. Rigler, is not quite correct, in that the sectional view should be shown at the side of the plan and not below it. This may account for any difficulty in understanding it. Mr. Dalzell (p. 104) supposes an opening to be left, which is not, I think, the case. I should be quite willing to assist any correspondent who has a difficulty in making a drawing, as I have done in the past from time to time.

Howitis (p. 86).—"Hants. B." is clearly a supporter of the Simplifyd Speling Sosyeti! His ingenious title seems very appropriate in its termination, if not its terminology, as the disease it signifies appears to involve an inflamed condition. When the disease is fully investigated it is probable, however, that the Isle of Wight will not be able to claim full credit (sic) for its discovery. And it may accordingly be difficult to obtain world recognition for it. Some germ(an) scientist may deserve the perpetuation and ennobling of his name. Personally, I am grateful to the Ohms and Watts, the Maassens and Burris of the world, but better pleased when the scientific name conveys some idea of the object.

Flight of the Bee (p. 87).—I hesitate to question any statement of so great an authority as Mr. Doolittle, but I imagine that the distances of the bee and the train from the observer must have differed considerably. Surely an unassisted bee cannot fly sixty miles per hour! Whereas a bee distant some ten yards from the observer and travelling only three miles per hour, would appear to cover the same angular distance as an express train a furlong away.

To "D.M.M." (p. 88).—I know not which member of the learned Council perpetrated these lines, and I can hardly imagine what "D.M.M." can have said to justify them! But if words mean anything, one can only conclude that the poet was knocked head over heels, and his ideas lacked time to right themselves. Exigencies of rhyme no doubt account for many of the poet's licences, but in this case I think the licence should be revoked by the censor! I dare not criticise in detail, for the lines appear to have been shaken up in a hat! I am sure that I am wronging the Council in supposing the hat to belong to one of their august body!

"ISLE OF WIGHT" DISEASE.

By J. Anderson, M.A., B.Sc., Stornoway.

In the belief that bee-keepers should pool their united wisdoms in a united effort to find the cause and cure of our most dreaded scourge, I am setting down a few random jottings on the "Isle of Wight" disease. It is possible that my isolated position, and my extreme youth—as a bee-keeper—may enable me to contribute something that may be helpful.

There were no hive-bees in Lewis prior to May, 1909, but subsequent to that date bees have been introduced at various times, both from Scotland and from England. "Isle of Wight" disease undoubtedly came here with two lots of driven bees from the south of England.

These came out of cottagers' skeps, but travelled to Lewis in swarm boxes on a few standard combs containing some honey. These old combs would be supplied by the agent from his own apiary, and it is probable that this was the real source of the infection.

The bees arrived in Stornoway on 28th September, 1910, and one lot was retained in Stornoway, the other being sent six miles out into the country. Both lots were transferred to frame hives, along with the old combs, and fed with syrup. They settled down quietly, bred freely, and gathered pollen up to 4th November.

The 31st of January, 1911, was a fine, mild day, and all our bees were moving freely. All seemed quite healthy, except the two lots of driven bees. Both of these, though six miles apart, began on the same day (31st Jan.) to exhibit what we took to be symptoms of "Isle of Wight" disease. We observed them carefully till the 2nd of March, on which date we killed the survivors, and thoroughly disinfected the hives, burning all inside fittings. It is to be noted that the disease came from England on the 28th of September, but it was 31st January (fully four months) before bees were observed to be affected.

None of our other stocks displayed the symptoms until 6th October, 1911, when two other stocks standing side by side were apparently affected. This time we dispatched live bees to Cambridge, and received word that "both stocks had young stages of the parasite, which they believed to be the probable cause of 'Isle of Wight' disease." You will note how scientifically cautious the bacteriologists are in their mode of expression. This second outbreak was seven months after the first, yet no fresh infection can have been introduced, so far as we can see.

I watched the two affected stocks very narrowly; one of them recovered, began collecting pollen again (14th October), and is in excellent condition to-day (2nd March). The other seemed to get worse daily, and we made a holocaust on 12th October, taking every care to destroy anything likely to retain infection, and spraying the ground with carbolic acid lotion.

Another stock was seen to be affected on 20th January, 1912, but the bees had apparently been dying for several days before we noticed anything unusual. This third outbreak is about four months after the second, and none of my other stocks seem to be affected, but the symptoms may appear after the usual interval. I did not slay the last stock, as I wished to see what would happen if the bees were left alone, but I removed them to such a distance from the others as to preclude all possibility of crawling bees reaching the healthy hives. Unfortunately, the weather had been very cold and unfavourable to bees, so perhaps the sick stock did not get a fair trial; it dwindled rapidly, and suffered much from dysentery. I found the few survivors motionless on the comb on 29th March. The queen was unmarred, and was just able to move her legs, but I warmed her into activity, and introduced her to a fresh lot of bees in a Nicolson Observatory, and she is there now, apparently all right.

I know the history of every stock of bees in Lewis, and I am of opinion that the three outbreaks of the disease are all due to the infection brought here by the two lots of driven bees from England. Each fresh outbreak caused a new infection, but the symptoms did not appear for some months. This is a feature of the disease which no one else appears to have noticed, because no other bee-keeper has had the same opportunity, as when there are bees all round a fresh infection may occur at any time.

This unsuspected peculiarity of the disease might account for the experience of Mr. Fairbank, recorded on page 86. In 1910 two of his three stocks died of "Isle of Wight" disease towards the end of the summer, the third stock remaining unaffected. Fresh bees were run into the two empty infected hives, and the three stocks wintered down. In January the strong, healthy stock was extinct, while the two stocks in the infected hives were quite prosperous. According to my theory, the apparently healthy stock had been infected in the summer, but the disease had not had time to develop before they went into winter quarters. They were dead in spring.

The bees in the infected hives did not immediately take the disease. They bred freely, filled the hives with brood and honey, and all seemed going well in the summer of 1911, but they were all dead by November. The disease was there in the combs, and the fresh bees got it in time, though it was months before they all died.

Statements have been repeatedly made that fresh swarms can be run into hives infected with the disease, and that the new bees do not take the disease. Did the bee-keeper watch them for *months* before assuming that they had escaped?

Mr. Ellis has discovered how to deal with the trouble (page 67): his argument is beautiful. "Isle of Wight" disease affects only the adult bees, the brood are exempt. Foul brood is a disease of the larvæ, adults being exempt. We cure the latter by removing brood and combs, and building up a fresh stock from the adult bees, so, conversely, we ought to deal with the new disease by destroying the adults, and building up afresh from the brood. Mr. Ellis reports that this method has been successful, but

did he watch the composite stocks for *months* before reporting?

This long interval between infection and the appearance of symptoms also explains why the distemper under discussion has been described as a disease of the older bees—the foragers. Naturally! Freshly hatched bees are not old enough to display the symptoms, even though they had been infected on the day the grubs emerged from the eggs.

Mr. D. M. Macdonald, who has apparently had extensive experience of the disease, has noted that in summer stocks can apparently cope with the disease by rapid breeding. There may be another reason why the disease is apparently checked in summer. In the working season most bees die of old age before they have time to display the symptoms of this new disease. It is calculated that the average length of life of the worker bee in summer is not more than six weeks. "Isle of Wight" disease takes months to kill a bee.

It does not follow that the disease germ is working inside the bee for months; it may have another host, in which it must pass one or more stages of its existence before it can pass to the bee. Tape-worms invariably have two hosts. The liver-fluke, which is credited in Britain with the death of one million sheep per annum, is adult in the gall-bladder of the sheep, but has three other stages, one of which is passed inside a kind of water snail. But if the "Isle of Wight" parasite has a second host, our first experience would tend to show that it must be inside the hive. It might be *Braula cæca* or the larva of a moth.

Those theories of mine are purely conjectural. I have just the one suggestion to make—that a stock may be infected with "Isle of Wight" disease and display none of the symptoms for months afterwards.

Just one other point. I note that Mr. Sladen claims that his British Goldens are exempt, also Dr. Malden in his report says that it has been suggested that Italians and hybrids are more resistant than blacks. Well, our stock which recovered consisted of American Goldens, while those that died or were slain were all blacks.

I have kept the Cambridge bacteriologists fully informed of what is happening to our bees, and have written this article in order that other sufferers may check our observations.

MODERN APIARY IN BULGARIA.

A BULGARIAN APIARY.

The photograph of this very modern looking apiary in Bulgaria was taken by Mr. H. Cowley, an old student at Swanley Horticultural College and a holder of a B.B.K.A. certificate.

While on a botanical expedition with a friend he had the honour to be presented to the King of Bulgaria; they also had a special railway carriage placed at their disposal by His Majesty during the whole

of the time they were in the country, to facilitate their work, in which the King is keenly interested.

Mr. Cowley says the photograph was taken near Stara-Zagora, which is close to the Black Sea. The curious point to observe is that, whereas this country is in a most primitive state and centuries behind any other part of Europe, yet in bee-keeping they obviously use the modern hive. He also adds, "It was the only modern thing that I saw in this out-of-the-way corner of Europe."

WEATHER REPORT.

WESTBOURNE, SUSSEX.

February, 1912.

Rainfall, 2·63 in.
Above aver., ·64 in.
Heaviest fall, ·55 in., on 22nd.
Rain fell on 21 days.
Sunshine, 55·3 hours.
Below average, 35·8 hours.
Brightest day, 10th, 7 hours.
Sunless days, 11.
Maximum temperature, 54 on 28th & 29th.
Minimum temperature, 16 on 4th.
Minimum on grass, 14 on 3rd.
Frosty nights, 8.
Mean maximum, 46·4.
Mean minimum, 37·0.
Mean temperature, 41·7.
Above average, 3·4.
Maximum barometer, 30·177 on 28th.
Minimum barometer, 29·036 on 9th.

L. B. BIRKETT.

Notices to Correspondents.

R. C. M. (Lincs.)—*Carbolic Acid for Disinfecting Hives.*—The solution you describe will do quite well for either washing the hives or making carbolic cloths. Of course the hive would have to be exposed to the air to get rid of the odour.

A. C. (Darwen).—*Variety of Bees.*—The bees you send are hybrid Ligurians. The best time to re-queen is in the autumn, but you could do it now, as soon as you can obtain a queen. Of the two kinds you mention we should prefer the "British Golden."

J. W. S. (Hereford).—*Fermentation of Honey.*—The only way you can prevent this is by warming the honey. Fermentation may be due to various causes, such as unripeness of the honey, bad storage, &c.

H. T. (Worsley).—*Bees found dead outside Hive.*—The bees sent are evidently old ones, which have died off in the natural way of old age. They are the ordinary British bee.

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PRIVATE ADVERTISEMENTS.

2½CWT. good light Honey (candied), in five tins, tins free, 52s. cwt.—WEAVING, Chipping Norton. t 72

WANTED, man with knowledge of Poultry, Bees, and Garden; state age, salary, live in. —The Acorns, Chigwell, Essex. t 2

WHITE WYANDOTTE EGGS, 2s. 6d. sitting; Houdan-Orpington, 2s.; new W.B.C. Hives, cheap.—BOWDEN, Broomhill, Witley, Surrey. t 71

A LADY giving up Bees.—9 Stocks of Bees on 9 Standard Combs each Hive. Bees strong in good sound Hives (some nearly new), including 19 Section Racks, 9 Doubling Boxes, 12 Bar Frames, Queen Excluders, and 2 Smokers, £15.—MRS. GEE, Bartlow, Cambridge. t 50

WANTED, Bees, guaranteed healthy; particulars.—WALTON, 40, Percy-road, Whitley Bay, Northumberland. t 69

2½CWT. light Honey, guaranteed first quality, 30lb. airtight tins, cash offers requested.—HARRIS, Wavendon, Woburn Sands, Beds. t 68

FIRST-CLASS EXPERT has Easter and Whit weeks free for touring, or other work with Bees.—WILSON, Apiary, Belper. t 67

VERY FINE HAMPSHIRE HONEY, in lb. and ½lb. screw cap bottles.—Price right, from W. FAY, Wade, Havant. t 65

TWO W.B.C. HIVES, secondhand, shallow frames, fitted wire foundation, excluder, rapid feeders, smoker, good order, perfectly healthy; what offers?—MURRAY, Shearing Hill, Gedling, Notts. t 65

FOR SALE, 3 dozen well filled light Sections; what offers?—W. BRADFORD, Wellingham, Ringmer, Lewes. t 64

FINEST GRANULATED HONEY, 1lb. screw cap bottles, 8s. 6d. doz., 95s. gross.—S. MATTHEWS, Whitton Nurseries, Hounslow. t 63

OVERSTOCKED, 24 Shallow Frame Racks, fitted with full new sheets, drone base, wired, 3/- each, great bargain, warranted healthy. Approval.—VICAR, Sancton, East Yorks. t 61

2 DOZ. first quality screw cap bottles Honey, 8s. doz.; strong stock healthy Bees, in W.B.C. chamber, 20s.; or Hive, with Queen Excluder and Section Rack 30s.; 6 shallow frame show cases for one frame glazed both sides, 1s. 9d. each; few wired clean drawn out Shallow Frames, 8in. rack, 9s. each.—SOFTLY, Letchworth, Herts. t 62

NEW OBSERVATORY HIVE, holds standard, shallow, and 4 sections, finished white enamel, 30s.; 4 unbound volumes "B.B.J."; would part exchange healthy skeps.—FROST, Hartshill, Stoke-on-Trent. t 60

CAMEO STAND CAMERA and all fittings, 30s. —G. FISHER, Skerne, Driffield, Yorks. t 59

SOW NOW, seed of Chapman's Honey Plant, per large packet, 6d., post paid.—GEORGE BELL, Shoreham, Sevenoaks. t 57

TWO WELLS HIVES, with lifts, good condition, healthy, recently painted, 12s. 6d. each; exchange entertained; Rosecomb Black Leghorn eggs, 2s. dozen, grand layers.—WARREN, Terrace, Hathern. t 56

Editorial, Notices, &c.

ANNUAL MEETING OF THE BRITISH BEE-KEEPERS' ASSOCIATION.

As will be seen on next page, the annual meeting of the members of the B.B.K.A. was held in the lecture hall of the Zoological Society, London, on March 21st, to receive the report and balance sheet for the year 1911. Although the report last year showed an improvement on the previous one, and was sufficient evidence that the policy of the Council was effectual in surmounting existing difficulties, the thirty-seventh report presented to the members on Thursday last was one of the most gratifying ever issued, and showed the Association to be in a very prosperous condition. The meeting, over which the Chairman presided, expressed its appreciation of the Council's work by frequent applause as he referred to one point after another, and the report was unanimously adopted.

In commenting on the report, the Chairman pointed out that the relations between the parent and affiliated associations were becoming more cordial. The latter showed their interest by their delegates taking a more active part in the deliberations of the Council. With their advice and help the Council has been able to obtain a thorough knowledge of the desires of the branches, and, wherever possible, these have been carried out. Notwithstanding the fact that an attempt has been made to alienate some of the affiliated associations, the number of these had increased to thirty-nine, against thirty-four in 1910 and twenty-eight in 1909. The Chairman further observed that since the beginning of the year two more associations had been affiliated, making forty-one, and that there were six others applying for affiliation. The advantages of affiliation are being better understood, and county and other associations are beginning to see that they cannot do without the B.B.K.A. Evidence of the far-reaching effect of the work of the Association is afforded by the affiliation of two associations from South Africa.

The membership had increased to 429, the largest number in the last twenty-five years, just double what it was two years ago, and forty-five new members had joined since the beginning of this year. Not only was the Association free from debt, but its net assets amounted to £380 19s. 7d., including a reserve fund of £201 3s. 10d.

The Association was to be congratulated that after many years of hard and patient work they had obtained Government recognition and help, by a grant of money for furthering the educational work of the Association. With the approval of the Government an experimental apiary is to be established in the grounds of the Zoological Society of London, at Regent's Park, where courses of lectures are to be given free to students. The obtaining this grant is ample evidence of the necessity and advantages of having a central Association, for in no other way and through no other source could this have been secured.

Satisfactory as all this was, the pleasure of the members was demonstrated by the applause which greeted the Chairman's announcement that after all the years of labour in endeavouring to obtain legislation with regard to diseases of bees, the time had arrived when their wishes were likely to be realised. He had been asked to come up to town and confer with the Board of Agriculture on the matter, and had done so the previous week. The result was that the B.B.K.A. were likely to obtain not only all they wanted, but also prohibition of the importation into this country of bees from infected countries abroad. This is very important in view of the prevalence of Isle of Wight disease and similar diseases in other countries. It is to be hoped that there will be nothing now to hinder legislation, so that steps may be taken to prevent Isle of Wight disease from further spreading. How near they had approached the desired goal may be gathered from the fact that on the day after the Chairman made this announcement Mr. Runciman stated in Parliament "that he hoped shortly to introduce a bill dealing with bee diseases."

Although the difficulties of travelling were evidenced by the smaller attendance it was gratifying to find that nearly eighty faced the inconvenience by attending the meeting and conversazione, and showed by their frequent applause that the enthusiasm for bee-keeping was not on the wane. We congratulate the B.B.K.A. on the work accomplished, and have every confidence that the policy now pursued will lead to the further benefit of the industry.

BEES IN PARLIAMENT.

On Friday, March 22nd, in the House of Commons, respecting bee diseases, Mr. Runciman informed Mr. Mount (U., Newbury) that he hoped shortly to introduce a bill dealing with bee diseases.

BRITISH BEE-KEEPERS' ASSOCIATION

ANNUAL MEETING.

The annual general meeting of members was held in the Lecture Hall of the Zoological Society of London, Regent's Park, London, W., on Thursday, March 21st, 1912. Mr. T. W. Cowan presided. Owing to the dislocation of the train

service it was not expected that there would be a large attendance, but in spite of this there was a very large number of members present, though many others sent letters expressing regret at their inability to attend on account of the restricted train service.

The minutes of the previous annual general meeting and of the special general meeting, held in October, 1911, were read and confirmed.

The Chairman, in referring to the report, said that it had been sent to all the members, and he was certain they would agree with him that it was most satisfactory in every way. In every branch progress had been made. There was an increase in membership, so that the Association had now more members than ever before in its history. Also the number of affiliated associations had increased, and the year 1912 would also create a record, as with only three months of the year gone, there were at the present time more associations affiliated than at any previous time. There were several applications for affiliation still to come before the Council.

A grant had been obtained from the Development Fund; and an experimental and educational apiary was to be established. The arrangements for the expenditure of the general fund under this grant were only waiting the final sanction of the Treasury; when this was received they would commence work throughout the country by sending out lecturers; also, in some of those counties where no association existed associations would be started; where associations were already in existence assistance would be rendered them.

State legislation to deal with diseases would no doubt soon become an established fact. A conference had been held at the Board of Agriculture which he and the Secretary had attended.

The Bill, as drafted by the Committee appointed for the purpose, was discussed and, with modifications, was provisionally agreed to by the conference.

To strengthen the Bill the Board of Agriculture would probably proceed by order to the local authorities, and if they failed to carry out these orders then the Board of Agriculture would carry them out themselves. Also, it was proposed to prohibit the importation of bees, &c., from those countries in which disease was known to exist. The Bill would no doubt do much to enable them to prevent the spread of the "Isle of Wight" disease. Providing nothing serious arose, such as a change of Government, to hinder the matter, they might expect that the Bill would go through before Whitsuntide.

The "Isle of Wight" disease was the one cloud; it was virulent in some districts while others were quite free. Referring to the finances, he (the Chairman) congratulated them on the satisfactory improvements shown by the balance sheet. There was not a single outstanding account.

As the result of increased income and economy in expenditure, the Association commences 1912 absolutely free from debt. By repayment to Reserve Fund of £50, the balance of the £70 borrowed for the purpose of publishing "Modern Bee-keeping," it has been increased from £151 3s. 10d. to £201 3s. 10d. The working balance on January 1st, 1911, was £57 14s. 11d.; on December 31st it was £125 13s. 8d. The W. Broughton Carr Memorial Fund of £63 15s. has been invested in 2½ per cent. Consols (£79 8s. 10d.), and the net assets are £380 19s. 7d., being an increase of £157 2s. 5d. (Applause.)

The library had also increased, and they were thankful for the gifts of books from a number of friends.

The Insurance Scheme was still most successful, and it behoved bee-keepers to take full advantage of it.

The exhibitions also showed an increase in the number of exhibits, both at the Royal, the Grocers', and the Dairy Show.

Not only had the usual Council meetings been held, but also a large number of committee meetings, of which, of course, no report appeared in the BEE JOURNAL, as was the case with the Council meetings; these committee meetings meant a great deal of work to the members of the Council. He was delighted to report such splendid progress, and moved that the report and statement of accounts be received and adopted. (Prolonged applause.)

The motion was seconded by General Sir Stanley Edwards, who said the report was most satisfactory, especially that portion regarding legislation.

There was no comment on the report, and it was carried unanimously.

Mr. Crawshaw proposed that the best thanks of the meeting be given to the retiring council and officers. The increase in the number of affiliated associations showed that any reflection on the relations between them and the Council had now been entirely removed. Mr. Moore seconded and it was carried with applause.

The Chairman briefly replied on behalf of the Council and officers.

Mr. Reid proposed the re-election of the vice-presidents, hon. and corresponding members, hon. treasurer, auditor, analyst, and solicitor for the year 1912; this was seconded by Mr. Lamb and carried.

The Chairman proposed the election of Monsieur E. A. Sevalle as an hon. member; Mr. Reid seconded, and it was carried.

Mr. C. L. M. Eales proposed, and Col. H. J. O. Walker seconded, the election of Dr. W. Malden as an hon. member; this also was carried.

Mr. Sladen proposed the re-election of

the Council for 1912, as printed on the agenda, with the addition of the two new names; this was seconded by Mr. Bocock and carried unanimously.

The names are as follows: Messrs. T. W. Cowan, W. F. Reid, R. H. Attenborough, R. T. Andrews, T. Bevan, C. L. M. Eales, O. R. Frankenstein, H. Jonas, J. B. Lamb, A. G. Pugh, A. Richards, J. Smallwood, E. Watson, E. Walker, Miss M. L. Gayton, Miss K. M. Hall, General Sir Stanley Edwardes, Sir Ernest Spencer, Dr. T. S. Elliott, Colonel H. J. O. Walker, and Captain F. Sitwell.

Mr. Cowan proposed a vote of thanks to the delegates from the affiliated associations who had attended the meetings throughout the year. He was glad so many had taken advantage of their appointment; it enabled the Council to keep in close touch with the Associations, and by their presence and help both at the Council and committee meetings, the Council were able to ascertain what the Associations wanted, and the delegates could tell their Associations what the Council wanted. This was carried unanimously.

Mr. Reid explained briefly the arrangements made with the Zoological Society with regard to the apiary and lectures.

This concluded the business of the meeting.

Report of Council meeting and conversazione will appear next week.

AMONG THE BEES.

By D. M. Macdonald, Banff.

PITFALLS BESETTING THE PATH OF THE NOVICE.

(*Continued from page* 103.)

A queen is just a queen in the eyes of most novices—only that and nothing more. Oblivious of the fact that one queen can lay one thousand eggs while her sister may find it hard work to oviposit one hundred, this wise fool contents himself with the inferior article. He wonders, perhaps, why the stock is deteriorating, but he lives on in hopes that matters will right themselves. Here is another of the pits into which novices fall with their eyes open. The knowing ones have but to look inside the hive and examine the brood-nest, even a casual glance reveals the cause. That failing queen is instantly deposed, and a new and prolific one takes her place.

A kindred failing is the inexplicable fondness the novice often has for hugging on to weaklings in both autumn and early spring. In most cases, those kept for winter go under during the first prolonged period of storm and frost from mere paucity of bees. The small cluster is quite unable to maintain the proper temperature necessary for successful wintering, and bees die out in the presence of ample stores. In spring the queen, if a good one, lays abundantly, but the great proportion of her eggs never hatch, while many of the larvæ lying outside the confined cluster die owing to too low a temperature prevailing in the brood-nest. Weaklings never pay, and should always be discarded as useless assets.

Food prepared by the bee-keeper as a substitute for natural stores should be of the best. Secure good cane sugar, be careful to use the proper proportion of sugar to water, and see that the mixture is well boiled, well stirred while melting, and that in autumn it is given lukewarm. Don't forget the pinch of salt, or the spoonful of vinegar in autumn syrup, as otherwise you will have sour food, or candied food, neither of which can be a healthy stamina supplying substitute for well ripened nectar. The novice is generally far too careless in small but essential features of syrup or candy preparations.

Hence we have frequently to lament that the apiary in spring exhibits foul flight-boards, and foul entrances, proving the presence in the interior of dysenteric generating compounds. A stock so afflicted either goes under during spring, or drags out a miserable existence throughout the whole summer. Want of proper wraps, a cold draught through the hive, or damp coverings from a cracked roof may bring on the same symptoms. The frequent spring dwindling in the beginner's apiary is often attributable to undue interference. The bees have been handled too late in autumn, or disturbed too early in spring. What may be meant for kindness may turn out a bane and not a blessing for the bees. Everything should be done decently and in order.

Then the novice at times seems to dig his own pitfall. Bees not thriving with a neighbour are purchased for an old song to bring disease and disaster to a hitherto prosperous apiary. Playing with disease is like playing with fire. The "child" in both cases burns its fingers. No beginner should purchase an established stock without getting along with it a certificate of health, or, better, not until he has had it examined by a capable neighbour, who knows disease when he sees it. The pit here is wide and deep, and too many wise men and women fall into it. Do shun its very neighbourhood if you desire to make a success of apiculture.

What a careless man the novice often is in the way of tempting bees to steal. Wet combs are left about to get cleared by the bees, syrup is spilt and left exposed to prove a snare to prospectors, racks of sections are left unguarded for prowlers to pounce on. Weaklings and small

nuclei are offered as temptations, and feeders are often unprotected. What more natural than that bees, when nectar ceases in the fields, should pounce on these sweets, believing that all is honey for them which comes within their reach. A very large proportion of the robbing booms are brought about by carelessness or negligence on the part of the beginner, who does not appreciate the evil consequences following his thoughtless acts. Experience teaches avoidance of these pitfalls.

Laisser faire, or let alone, is a pitfall of very deep and wide dimensions. The beginner *chances it*. He thinks bees should have ample stores for winter, they were so strong in autumn, and gave such a fine amount of surplus. They appeared to work strong in late autumn. Guessing that they have full stores is no good; ascertain whether they have or not. He again thinks they have ample room above during the full honey flow, whereas the fact is they are congested with honey. The queen's labours are thus retarded, the workers are discouraged from active labours in the fields, and brood diminishes, causing a reduction of the forces to follow as a natural corollary.

The actions of too many during their apprenticeship look as if they were anxious to break up their forces under the swarming impulse. At least they appear to do everything possible to cultivate the fever, and do nothing to check its inception or development. They treat their bees as if it were mid-winter. The very smallest entrance is given; they have not the very faintest notions of providing ventilation; they never glance in to see if either bees or queens need more room, and indeed they treat their frame-hives very much as the straw skep man deals with his antediluvian bee domiciles.

ERRATA.

In "Helpful Hints to Novices," p. 113, line 12 in first column, should read, "that when revolved the *bottom* bar leads."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

DISEASES OF BEES LEGISLATION.

[8410] The Diseases of Bees Legislation Committee have drafted a bill which proceeds along the lines of least resistance, and should not be difficult to work. They have evidently been animated with a desire to hit the happy medium, and the bill will, I am sure, be approved by the great majority of bee-keepers in this country. It does not go beyond apicultural opinion, but it lacks one provision that may vitiate the whole measure. While the bill seeks to prevent dealings in diseased bees, diseased appliances, and diseased products of bees, it makes no provision for stopping the importation of diseased bees or bees from places outside Great Britain in which bee diseases of an infectious nature are known to exist. In this a real danger lies, and I think a clause might be inserted giving the Board of Agriculture power to prohibit, for any necessary period, the importation of bees into Great Britain, should that course be desirable. I would also suggest some slight alterations in the drafting. In Clause III., sec. 3, the words "or extended" might be inserted immediately after "revoked." With the clause as it stands the difficulty could be got over by making a fresh order. Again, in Clause IV. sec. 1, it would be wise, perhaps, to use the plural as well as the singular in the reference to owners of bees, &c. Why should not the bee expert have power to take samples of appliances? It would not often be used, but it is easy to imagine cases in which it would be useful. So far as combs are concerned, why should Clause VII. be confined to brood combs? Is there no danger in combs from surplus chambers?—Chas. H. Heap.

[8411] May I make a suggestion re the Bee Disease Bill, the draft of which appeared on page 191, "B.B.J.," March 14th? I am not a very experienced bee-keeper, but have twenty-five stocks (all in good health at the present time), and so have some interest in the proposed legislation.

Some time ago you printed a letter from me advocating exemption of holders of certificates from inspection. I have since been thinking the matter over, and although it would be "very nice," in my opinion, I am afraid it would not do in an Act of Parliament, which must, I now see, be without favour of any kind. I therefore shall be pleased to do what I can to forward the Bill, but at the same time I hold that there should be some alterations in it. In the first place, for safety, I think that in Clause IV., Sec. 1, there should be some time for inspection stated, say between April 1st and September 30th, during which apiaries may be examined compulsorily. In the second place (*a*) some minimum notice should be stated.

Also, I think an expert should be obliged, before beginning an examination on an apiary, to thoroughly disinfect him-

self *in the presence of the owner of the bees he is about to handle*. Even then I think Mr. Wordley's objection should be considered. An "expert on tour" would be liable to cause the I.O.W. plague to spread even faster than it seems to increase already, because so little is known of this disease and how it is carried from one stock to another.

Re J.M.B. (8404). Certainly he would under the Act be bound to keep his diseased bees at home, and, indeed, I should think he would do so of his own accord; but does he imagine that any inspector living would prohibit his moving his healthy stocks to the moors or bringing them home again, unless he had a case of I.O.W. disease or a very general plague of foul brood? Also, he does not consider the notification Clause VI., in view of which he would have to notify any disease he found in preparing his bees for the heather, when the inspector would probably destroy or isolate and treat the diseased stock or stocks.

Also, may I call your attention, Mr. Editor, to Clause V., Sec. 1 (*c*). Should not the word "infected" be inserted, so as to read, "For prescribing and regulating the destruction of any infected colony?"

I am very pleased to see that there is in the bill no mention of the abolition of skeps. Has it ever been ascertained in what proportion the skeppists are of the total number of bee-keepers in this country? I rather suspect them to form a majority. Can any one say?

Re the letter from Rector (8408). This letter shows very plainly the extremes to which anything may be carried. I am afraid when the Bee Disease Bill becomes law (if it ever does) this gentleman will have to let daylight into his hives.

With regard to glass covers, can Mr. Dalzell give us the names of a few, say three, bee-keepers with eighty stocks or over who work all, or a majority, with glass covers? It would, I have no doubt, help to persuade us of their usefulness as practical appliances in the apiary. My own opinion, never having used glass covers, is that for all practical purposes there is nothing like the quilt. I don't want my bees to come through the winter better than they have done this time under porous quilts.—R. B. Manley.

[8412] May I congratulate the committee on the text of the above Bill, as given in your issue of March 14th? The only suggestion I would make is, that in Clause V., Sec. 1 (*b*) the words "or appliances for bees" should be inserted after "colonies," and in (*c*) "or products of" should be inserted after "hive."

The committee have done well not to exempt those who call themselves big bee-keepers; such class legislation is totally opposed to present-day ideas, or to an Englishman's notion of fair play. The number of stocks a man has is no guide or guarantee as to his knowledge or capabilities of dealing with disease. I know one so-called bee-keeper who, when I last visited him, had over sixty stocks of bees, and did not even know how or when the queens were mated. I was only once allowed to examine any of his stocks, and half-a-dozen taken at random were all found to be more or less diseased; at the same time he was doing a fair trade in selling bees, combs, and appliances in the neighbourhood. In several instances I saw the disastrous effects of purchases made from him. I could give other instances of big bee-keepers dealing in diseased bees and combs, &c.

With regard to skeps, in some parts of the country, it would no doubt be a hardship and very unwise to exterminate them, but possibly that could be left to the local authority to deal with. In a county like Lancashire, for instance, where I have had the pleasure of doing the expert work for the last four years, there have been less than forty skeps, among from 300 to 350 members. It would be very little hardship there to make the driving of all skeps, &c., at the end of the season compulsory, but the case would be very different in some of the southern counties, where one could find more skeps in a week's tour than there are in the whole of Lancashire.

To say that skeps or skeppists do not spread disease is simply nonsense, as I know to my cost. This district was quite free from disease until it was brought by a skeppist from a village a few miles away about eight years ago. It was not at all difficult to get the skep destroyed, but the mischief was done, and it has been a very different matter to get rid of the effects of that one diseased skep. The fact is that skeps are difficult to examine. I once examined thirteen in one apiary by cutting out a comb from each, when every one was found to be diseased. I have also seen skeps and boxes, in which bees have died from disease, turned up for other bees to clean out.

To my mind your correspondent, "J.M.B." (8404), makes out a very good case *for* the Bee Diseases Prevention Act. It appears that if he knew his bees were diseased he would still move them up to the moors, probably among other stocks, only this Act will prevent him doing so—"Truly a nice state of affairs." This is just one of the instances in which the Act will do good. I have heard bee-keepers complain of those who will take infected stocks on to the moors and spread disease to those around. I should advise "J. M. B." to keep his bees as far as he possibly can from other hives on the moors, or anywhere else; then should that "pry-

ing expert," who has been given a hint, spot the disease, other healthy stocks may be allowed to be moved by their owners. He also seems to overlook the fact that the "prying expert" who has "reasonable grounds for supposing that disease exists," has to give "reasonable notice" of his intention to examine hives.

I hope the Act will come into force at the earliest possible moment. It has been postponed and delayed far too long already.—J. HERROD, Sutton-on-Trent.

HOW PROPOLIS IS COLLECTED.

WITH A NOTE ON POLLEN-COLLECTING.

[8413] Thinking that it would be well-nigh impossible for the bee to pass a gummy substance like propolis through the joint between the hind tibia and metatarsus, as it does the pollen, I exposed a propolised quilt in the warm sunshine to see what would happen. Soon a bee alighted, and, after making several futile attempts, bit off with its mandibles a little piece of sticky propolis, and seizing it in its fore feet transferred it to its left corbicula by means of a quick motion of the left middle leg, patting it on to the corbicula with the metatarsus of the left middle leg. The propolis was collected in this way, bit by bit, on to both the left and right corbiculæ. Thus the bee loads its corbicula with pollen by one method and with propolis by another method, the former substance being combed on to the corbicula through the leg from the metatarsus of the opposite hind leg, and the latter being plastered on to the corbicula by the metatarsus of the middle leg on the same side.

I am able to corroborate from observation the statement made by Mr. L. S. Crawshaw at the recent B.B.K.A. conversazione, that in the arabis the pollen is gathered and kneaded with the mandibles before being placed on the metatarsi, and have noticed that this method is also employed, exclusively or not I cannot say, in collecting the pollen from the goat willow and the laurustinus. Plenty of flowers of different kinds are now coming out, and keen eyes will, no doubt, have many opportunities of noting interesting details in pollen-collecting.—F. W. L. SLADEN.

LLOYD'S AND INSURANCE.

[8414] Some there are who may read this article who possibly will think I am endeavouring to teach their maternal ancestor, once removed, to extract the nutriment from an egg by the art of suction. But there are many to whom "Lloyd's" means perhaps nothing more than the name of a newspaper. Oh, no! I forgot, there are those who will recognise the name as belonging to a gentleman also connected with another scheme of insurance, but his family name is George. I feel somewhat inclined to draw some comparisons. But this paper is censored. If I touch politics, which by a very wise rule are excluded, I may perhaps have this contribution thrown into the waste-paper basket.

But "Lloyd's" *the* "Lloyd's," is one of those rock-built pillars of commerce and national credit which are so interlaced with our stability as an Empire. Nothing less than the wiping out of our existence as a State would prevent "the old lady of Threadneedle Street" opening her doors five minutes late in the morning, and that such a thing as a legitimate "claim" on "Lloyd's" not being paid is about as possible as that a foreign fleet should emulate Van der Tromp, and sweep the Channel, or the army of an enemy lay siege to London.

It is always interesting to study the history of any of the organisations which influence and direct the life and actions of this day, for by that means we learn from the wisdom of our predecessors and draw from the accumulated records of the past, to our advantage and instruction. And as the motive of this article is to show the absolute security of those who subscribe to the insurance scheme of the British Bee-keepers' Association it will not be foreign to the objects of this JOURNAL if I tell in as few words as possible of "Lloyd's" and insurance, how they both had their birth and have grown, and possibly also explain a little as to how these things are managed at the present day.

The earliest traders who visited these shores were the Phœnicians, trafficking in tin from Cornwall, and though it is a matter of tradition that they laid aside a percentage of their profits (as naturally all wise merchants would do) against losses by sea, there is no documentary evidence to that effect. Possibly the earliest reference to anything akin to insurance was an ordinance of the Emperor Justinian (A.D. 533) who permitted money to be advanced at 12 per cent. on what was really "Bottomry." So Gibbon informs us. In that period of the Roman Empire, usury was repressed by very stern laws, although, needless to say, it was easy to evade them. Bottomry was an arrangement whereby the ship was mortgaged for money advanced. If it arrived safe at port the loan was repaid with agreed interest, but if unfortunately the vessel was lost then also the advance was lost. Merchants from the Continent early settled in England, especially traders from the Low Countries. Ethelred II., in 979, encouraged and patronised them. Edward the Confessor gave them important privileges and monopolies, in return for which they were obliged to make him valuable

gifts of merchandise at Christmas and Easter. Hence they were called Easterlings. They were permitted to establish themselves in that part of the City of London where now the trains run over long gloomy arches into Cannon Street Station. They fortified with high walls and built warehouses on the area bounded by Upper Thames Street on the north, All Hallows Lane on the east, and Cosin Lane on the west, which was called the Steelyard, and they the merchants of the Steelyard—corrupted from Stœpel Hof to Staple House, then to Steelyard. Now these Steelyard merchants, connected with and representatives of the Hanseatic League, carried on their maritime business under the regulations of the laws of "Wisby," a Baltic port, and we read in the *Chronykvan Flanden* that the Count of Flanders in 1310, at Bruges, gave the Hanseatic League a Charter of Insurance, permitting them to insure vessels almost on the terms and after the same manner as insurances are nowadays effected.

Naturally English merchants grew jealous of the privileges accorded to foreigners, which irritation culminated in Queen Elizabeth's reign. Mainly at the instigation of Sir Thomas Gresham, the founder of Life Insurance in England, such stern "Tariff Reform" measures were passed in 1597 that the Steelyard merchants were compelled to close their business, and finally they were expelled on the last day of February, 1601.

Now this Sir Thomas Gresham advertises in May, 1560, that he has insured two vessels laden with gunpowder for £2,000, and on 23rd September, 1561, he insures a cargo of armour for £1,000 at five per cent. in a sailing vessel, which, strange to say, is about the rate now charged for a similar risk.

But driven by civil wars from Italy, long-bearded (*longus barbus*) natives of that land fled with their money and valuables to England, and made loans at heavy interest. Having of the needful, they soon acquired powerful friends, who obtained the grant of the Fen land—considered of little value between Bishopsgate and the Thames—and built houses on it in 1610. They were called Lombards, hence Lombard Street and Fenchurch Street. In 1654 merchants used to meet at certain "kauphy" houses (as coffee then was spelled) to discuss their business. Auctions of ships and valuables were held at these coffee-houses, sales being by "inch of candle," *i.e.*, the highest bidder before the candle burned out was the purchaser. One Edward Lloyd kept one of these establishments in St. Michael's Alley on Cornhill, and we read in the *London Gazette* of 21st February, 1688, of such a sale, and also of certain valuables, jewellery, &c., being lost, the finder of which would be rewarded on applying at Lloyd's coffee-house. In 1692 he moved to Tower Street, afterwards to Lombard Street, around where all banking and maritime business had commenced to concentrate, and there he started *Lloyd's News*, the oldest newspaper existing (in its continuation as *Lloyd's List*) at the present time; it gave and gives particulars of the movements of all vessels. At first of course such information was meagre. Now they have trustworthy agents in every port to transmit messages by wire or by "Marconi."—J. Smallwood.

(*To be continued.*)

"ISLE OF WIGHT" DISEASE (?).

[8415] About six years ago, before hearing or reading anything about the above, I had an experience which I have often thought of since. Carried away by a passing fad, I purchased some queens of a race which shall be nameless from an English town which shall also be nameless. Those queens were safely introduced, and as the spring advanced the respective hives were watched with great interest—one especially so, the alighting board being often covered with bees apparently unable to fly, and later the ground in front also being covered with bees. An examination was made which showed signs of the queen being an excessive breeder, eggs being seen in cells close to the wood, and pollen scarce, which was thought to be a partial cause of the weakness. I swept up about a pint of bees from floor-board, &c., dead and dying, and hoped for an improvement with a further advance of spring and assistance by way of feeding.

There was no improvement, however, and in disgust I demolished the lot and trenched the ground around the hive. I have seen nothing like it since, but needless to say, my motto has since been "English bees for the English climate."—J. M. B., Trewoon Apiary, Cornwall.

EXPERTS AND THE SPREAD OF BEE DISEASES.

[8416] I have refrained from writing on the unsavoury subject of diseases for a long time for two reasons: (1) because I felt that the Legislation Committee could be relied upon to work out a Bill which, whilst dealing effectively with the diseases, would not, when put in force unduly harass any member of the craft; (2) because the objections put forward in your columns are mere reiteration of old arguments which have been to all unbiased minds satisfactorily disposed of by yourself and others over and over again.

There is, however, one argument which

should not pass unchallenged, because if accepted by the rank and file of bee-keepers it would at once check the advancement of the craft to such an extent that all associations might forthwith give up the work, whereby hundreds of people have been taught a hobby which is of all country pursuits the most fascinating, and one of the most lucrative. I refer to the assertion that experts are "an army of germ-carriers, distributing disease to *every* member of the association," which is printed in "Notes by the Way," page 114, over the signature of Mr. Woodley. If the British Bee-Keepers' Association, which confers the title of expert after an exhaustive examination, is content to have those whom it has honoured stigmatised as an army of filthy creatures responsible for the wholesale spread of a disgusting disease, then it becomes the duty of the experts themselves to show that they resent such an unfounded slander on their profession. As an expert, a member of the Council of the B.B.K.A. and Hon. Secretary of a County Association whose experts have dealt satisfactorily with more cases of disease than Mr. Woodley has probably ever seen, I beg most respectfully to repudiate the statement that we are germ-carriers. Further, I think it is high time that the Council of the B.B.K.A. as a body should throw off their official apathy and put on record their disapproval of any member of the association casting such a stigma on those who are members of a most useful body, and who realise and try to carry out their duty in a manner not exceeded by the members of any other profession.

Has Mr. Woodley ever met a *certificated* expert who could honestly be stigmatised as a "germ-carrier"? If so, a grave responsibility rests on both the expert and those who allowed him to qualify as such. If Mr. Woodley has not very good and sufficient reasons for laying this charge on the whole army of experts, then a grave responsibility rests on him, in misusing his well-earned influence in the bee world, to warp the minds of those whom I fully believe are a very small minority, and to whom an argument of this kind irresistibly appeals. What, might I enquire, would the great army of doctors say if they were classed as an "army of germ-carriers"!—G. W. Avery.

Queries and Replies.

[8300] *A Novice's Queries.*—(1) How can I use up some left-over candy? What quantity of water should I add for making it into syrup, and should more naphthol beta be added? (2) How can I cleanse combs containing honey and pollen which have been in a hive which was slightly affected with dysentery? Some cells contain what appear to be eggs of wax-moth; cocoons were near at hand. How can I make them fit to use for bees again? (3) Would it be any benefit to the bees if I put a comb filled with water in or near brood-chamber? (4) Could you kindly give through "B.B.J." a list of the bee flowers which would ensure a continual bloom all the season?—J. H., Whitley Bay.

Reply.—(1) Weigh the candy, and if it is quite dry, add the proportion of water to the pound as given for syrup-making. If it is moist then the quantity of water should be reduced slightly. (2) Do not try to disinfect the combs, but melt them down and replace with full sheets of foundation. (3) No; water should be placed outside in a shallow vessel filled with stones for the bees to rest upon when drinking. (4) You can obtain a list of these from Messrs. Sutton & Sons, Seedsmen, Reading.

[8301] *Giving more room in Spring.*—I have just purchased a stock of bees in a W.B.C. hive, and as I have had no practical experience of bee-keeping I should like to know how soon do I give the bees more room in the brood-nest. They are covering six frames, and I have several extra frames fitted ready with foundation, but do not want to risk chilling the brood by opening the hive too soon. I want them to increase as quickly as possible, and do not wish to restrict them for room. I have not examined the bees at all yet, but noticed a large number flying during the time the bright sun was shining recently.—H. C., Isleworth.

Reply.—On a fine, warm day examine the bees, and if they are crowding all the combs give a new frame fitted with a full sheet of foundation on the outside of the cluster. Repeat this when the combs are crowded again. Our object is to help amateurs, and we are only too pleased to do this; so do not think you are worrying us unnecessarily.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Hive Protection.—The best and most suitable material, and the best mode of applying the same to protect the hive cluster in winter, in order to obtain the most successful results at the close of the season of repose, is an evergreen subject *Gleanings* deals with interestingly and instructively in the issue of 1st February, and I glean a few of the more important ideas without grouping or arranging them under different heads.

"A colony of bees, even though it be contracted down to a comparatively small ball, is a miniature radiator, *i.e.*, a source

of heat (and an emitter of heat). The closer a thermometer is placed to this ball the higher the temperature will go. Now, if this ball of bees is a radiator, and if those bees have to keep up their body-heat by consuming honey, the colder the atmosphere around the cluster the more food will be required."

Mr. Root says: "The question of upward ventilation, or sealed covers, will depend largely on locality. We are beginning to favour a flat cover on top of the hive *not sealed down*."

Mr. Holterman says: "Loss of heat means loss of honey and loss of vitality of the bees. A thermometer above the cluster shows the temperature a few degrees below that of the cluster. *There's the point!* This is a clear proof that there is a certain amount of heat given off. Remember this, that increased heat is expended energy—bee life, plus honey."

A large proportion of the bee-hives in Canada and the States are wintered in cellars, but of late, even in the colder northern regions, opinion is maturing in favour of outdoor wintering. Mr. Byer tells us that some four Canadian bee-keepers, owning among them over 2000 colonies, believe out-and-out that this system of wintering *is best*.

Statistics.—It seems there is rather a decline in the number of hives in U.S.A., and also in the number of bee-keepers, according to Government returns. In 1900 there were four and a quarter million bee-hives; in 1910 they had decreased to three and a half millions. In the first year bee-keepers numbered over 700,000; at the end of the decade they had gone down to under 600,000, yet the value in dollars had increased by $200,000. *Gleanings*, in spite of this apparent dwindling, declares that there is no reason to doubt that there will be more colonies in 1912 than ever before. Apiculture has never been in so good condition as it is now. As an indication of this the demand for supplies during the decade exceeds that of any previous period.

Short Courses.—Guelph College, Canada, has finished the second course, and results have proved highly satisfactory. The Secretary reports: "The students are now scattered once more, and it remains for them to put into practice some of the good things they learned while here, and to show their neighbours that a course is beneficial in raising the standard all over each district." These students leaven the whole lump!

One for the Ladies.—Mr. Tyrell, secretary of the American National, and proprietor and editor of the *Review*, is a man of indomitable energy. In "Editorial Comments," in *Am. B. J.*, we have a laudatory tit-bit which ought to have appeared in Miss Wilson's column: "We may say that the secret of his tremendous energy, resourcefulness, &c., is greatly due to the good cooking, and the inspiration and helpfulness of his wife's all-round efficiency."

"*The National.*"—Under the new *régime* this Association is introducing at least four improvements. The directors are to send out *honey crop reports* early in the season to every member. They are to make it their aim to bring about uniformity in *honey packages*, in order that every member would be using exactly the same case. To enable members to obtain proper returns for their honey crop they are to establish *selling agencies* in several of the largest cities. Formation of *local branches* will be encouraged fully affiliated to the central society.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

W. A. (Bucks.).—*Incorrect Teaching.*—This is not the only error in the book you mention. There is no need to make a ventilation hole in the floor-board of a W.B.C. hive. Use it as perfected by its designer, and you will be all right.

H. B. (Kent).—*Clearing Old Pollen from Combs.*—This should not be attempted, as it is only waste of time. Melt down the old combs, and refit the frames with full sheets of foundation.

STARVATION (Durham).—*Stock found dead in Spring.*—The queen, which has only a slight trace of the Italian about her, has been badly injured in some way, and this has prevented her from laying fertile eggs; the worker cells contained drone larvæ. The bees have died from starvation as you suggest.

W. P. D. (Dudley).—*Blacks and Hybrids in same Stock.*—It would appear that a queen of another breed had been introduced to the stock before you bought it. All the old bees will die off very soon now. You will then be able to tell what breed the bees are. You do not say how long the bees are in taking down the ½ pint of syrup. If they seem to be taking it too fast reduce to one hole.

A. W. (Montgomery).—*Joining Bee Associations.*—It is quite a usual practice for associations to admit members residing not more than two miles over the border. You had better write to the Secretary of the Shropshire B.K.A., Mr. S. Cartwright, Shawbury, Salop, who will give you the desired information.

Nottingham Castle.—*Canadian Bee Association.*—The Secretary of the Ontario Bee-keepers' Association, Toronto, would inform you regarding bee-keeping in Canada. There are also a number of small branch associations in various parts of the country. The *Canadian Bee Journal*, a monthly periodical, is published at Brantford, Ontario. It can be had from "B.B.J." Office, at 5s. 6d. per annum.

J. C. (Blackheath).—*Bees-wax.*—The sample sent is bleached wax, and apparently it has had a fair percentage of tallow fat added.

H. D. P. (Letchworth).—*Stock not Flying.*—If there are no bees flying on warm days, we are afraid there is no doubt but that they are all dead. Open the hive and send a few of the bees in a tin box; we may be able to tell you the cause of death.

P. F. J. (Glos.).—*Sending Bees by Rail.*—Unless you can prove gross negligence on the part of the railway company you would be liable for any damage done.

A. B. F. and F. S. Smith.—*Extracting.*—We thank you for your letters, though the error would have been corrected this week, as it was noticed immediately after the Journal was printed.

J. J. N. (Horwich).—*Mouldy Combs.*—(1) It is not a sign of disease, but usually such combs are not worth keeping and should be melted down. (2) Write to the Secretary of the Lancs. B.K.A., Mr. W. H. Martin, Thurston Lea, Cambridge Road, Southport.

W. L. T. (Beds.).—*Transferring Bees.*—Buy a "British Bee-keepers' Guide Book," on page 149 of which you will find instructions for transferring a stock from a skep to a frame-hive.

Suspected Disease.

W. P. S. (Bedford).—We regret to say the bees appear to be affected with "Isle of Wight" disease.

J. J. B. (Chippenham).—The bees have died from "Isle of Wight" disease. It would be foolish to attempt to use honey from the brood-combs. Be wise and burn the lot.

Deepdene (Staffs.).—You could start again if proper disinfection is carried out. Treat the hives with the preservative advertised in our columns. It is quite safe to keep the stocks you have, but they should be put into the hives and treated as above as early as possible.

R. R. (Yorkshire) and W. W. (Ayrshire).—The bees are affected with Isle of Wight disease.

Alarmed (Hants).—The bees have died of Isle of Wight disease. Destroy at once and burn all dead bees, combs and internal fittings of the hive. You might treat all the other healthy stocks with Ayles' cure, advertised in our pages.

Honey Samples.

H. G. B. (Kensington).—The sample is an excellent clover honey.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence. *Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.*

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½ in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

ITALIAN HYBRIDS.—Discontinue keeping; 12 Stocks, with fair Hives, 12s. to 15s. each; guinea Extractor, 7s. 6d.; Super Foundation, 2s. lb.; new Sections, 2s. 100; Section Racks, Dividers, 9d.; Shallow Frames, 1s.; other appliances, half price. —REV. MAWSON, Stocklinch Rectory, Ilminster. t 92

BUFF PLYMOUTH ROCKS, prize laying strain, good table birds, true to type, eggs are very fertile, and producing very strong healthy chicks; eggs, 15 3s.; 50 8s. 6d.; day old chicks, 13 6s.; 50 £1.—J. HOUSEHAM, Huttoft, Alford, Lincs. t 91

FOR SALE, pure English Honey, light colour; sample, 2d.—LAW, Cuckoo, Ashwell, Herts. t 90

FOR SALE 4 28lb. tins of very very good granulated Suffolk Honey; sample, 2d.; 17s. tin; tins returnable; also few pounds (shallow) Weed Foundation.—CROWE, Central-avenue, Wigston, Leicester. t 89

BARGAIN Cottage, 3 acres, outbuildings, 40 Hives Bees, and good connection for sale of Honey.—G., c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C. t 88

FOR SALE, laying Fowls, 2s. 9d. each; Leghorn cockerel, 3s.—29 Ulundi-road, Blackheath, S.E. t 87

MAGNIFICENT Stock of Bees, covering 9 frames, 1911 Queen, plenty stores, just overhauled, in good hive, 30s.—DR. WOOD, Maltby, Rotherham. t 85

FOR SALE, 2 W.B.C. Perfection Hives, with section crates, one Hive stocked with Native Bees, excellent condition, £2.—MISS JACKSON, Uplyme, Devon.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held immediately after the annual meeting. Mr. T. W. Cowan presided, and there were also present Messrs. W. F. Reid, J. B. Lamb, C. L. M. Eales, E. W. Walker, O. R. Frankenstein, T. Bevan, A. G. Pugh, J. Smallwood, A. Richards, General Sir Stanley Edwardes, Colonel H. J. O. Walker, Captain Sitwell; Association delegates, Messrs. G. W. Judge and J. E. Smiles (Crayford), G. R. Alder (Essex), L. McNeill Stewart (South Beds.), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Miss Gayton and Dr. T. S. Elliott.

The minutes of the Council meeting, held February 15th, were read and confirmed.

The following officers were elected:—Chairman, Mr. T. W. Cowan; Vice-Chairman, Mr. W. F. Reid. Finance Committee, Messrs. R. W. Attenborough, T. Bevan, C. L. M. Eales, J. B. Lamb, J. Smallwood, and A. Richards. Exhibition Committee, Messrs. T. Bevan, E. Walker, O. R. Frankenstein, A. G. Pugh, E. Watson, and Captain Sitwell. Publications Committee, Messrs. T. Bevan, C. L. M. Eales, J. B. Lamb, W. F. Reid, and J. Smallwood. Emergency Committee, Messrs. W. F. Reid and J. B. Lamb.

The following associations applied for affiliation and were accepted: Croydon and District, and Barnet.

The following new members were elected: Mrs. C. Thompson, Escrick, York; Miss A. L. Lassen, Maidenhead; Mr. W. H. Tinsley, Chebsey, Eccleshall, Staffs.; Mr. F. Gravil, Raper's Hotel, Cardiff; Mr. J. Stebbings, Hillborough, Norfolk; Colonel R. S. Frowa Walker, Scotts Lodge, Knockholt, Kent; Major H. Goodwyn, St. Helier, Jersey; Mr. D. Ingamells, King's Grove, Maidenhead; Mr. W. Ion, Healing, Lincs.; Mr. W. H. Simms, Bushey, Herts.; Mr. F. Hervey Bathurst, Aston Clinton, Herts.; Mr. H. Bruce, Cranford, Middlesex; Mr. E. Hawkes, 19, Grange Terrace, Leeds; Mr. J. Flashman, Falkland Road, Barnet.

The following names of delegates were submitted and approved: Mr. G. Hayes (Notts.), Mr. F. W. Moore (Bedford), Mr. J. B. Lamb (Middlesex), Mr. Gravil (Glamorgan), Mr. L. McNeill Stewart (South Beds.), Rev. D. Lloyd Jones (Suffolk), Mr. J. Tinsley (Staffs.), Mr. T. W. White (Essex).

The financial report was presented by Mr. J. N. Smallwood. It was resolved that payments be made amounting to £50 12s. 4d. The receipts for the month of February were £21 16s. 11d. The balance in hand at end of February was £162 4s.

The dates of Council meetings for 1912 were arranged for the third Thursday in each month, excepting August, when there is no meeting, and the October meeting, which is to be held on the 10th.

A vote of thanks to Mr. Smallwood for his services in connection with the keeping of the accounts brought the meeting to a close.

Next Council meeting, April 18th.

THE CONVERSAZIONE.

At the conclusion of the annual meeting, as reported in our last issue, about eighty members and friends assembled for the conversazione which followed. Light refreshments were served, after which the Chairman (Mr. T. W. Cowan) called upon Captain Sitwell to read his paper on "Heather Honey," which he did as follows:—

Mr. Chairman, Ladies and Gentlemen,—In selecting my subject, I did so with a specific object, namely, that discussion may possibly throw some light on many puzzling points, and thereby something may be added to our knowledge of the subject of the secretion of nectar, the cause of variations in colour, density, &c., in honey, by bee-keepers who are present giving us the result of any observations they have made, or by inducing some who have time and opportunity to take notes in the future on some of the points that I shall now attempt to bring forward.

As all British bee-keepers know, heather honey is in some districts the main crop of the year. In guide-books, and in most articles on the honey-crop, *clover* is stated to be the mainstay of the bee-keeper. This may be the case in the South and Midlands, but in the North generally, and in the North of Scotland, heather, and heather alone, is all we have to depend on. In my own district, flower and clover honey are acceptable, and we try to get as much as we can; but what we aim at and work for almost entirely is to have as many stocks as possible fit and ready for the moors; in short, what we look to for our profits is the heather-crop.

Luckily for us, heather honey always commands a good price. I say luckily, for although clover years vary, one season like the last being exceptionally good and another not so good, I think I can safely state as a fact that the average clover-flow is of longer duration and much more regular than the heather-flow. The heather-crop also varies year by year, but seldom or never in the best year does the flow last as long as the clover-flow. Last year, which was quite exceptional as a whole, it barely lasted three weeks. I am talking now of the flow, not the length of time the bloom lasts. On an average it

seldom lasts ten days, and what makes it extremely difficult for the bee-keeper is that it comes by fits and starts, is very irregular generally, though not always, as I shall show later, coinciding with the hot days, or a hot spell. With an irregular flow we all know what constant and careful watching is required to obtain the best results, and that in the home-apiary; but hives at the moors are practically out-apiaries, and it is seldom possible for the owner to be always on the spot, so perforce he has to trust to luck.

As samples of flows, let me take the last six seasons. In 1906 the heather was in bloom about August 12th, but owing to cold and rain no honey was stored till the 30th. On that date the weather became suddenly hot, and remained so for nine days, the temperature in the shade reaching 85deg. A severe frost on the night of September 7th ended the flow as suddenly as it began. In 1907 it lasted a week, and that not until the second week in September, from 6th to 12th. In 1908 there was a very good flow from August 3rd till the 14th. After that date, nothing. In 1909 it was most uncertain, the flow being on August 27th and September 2nd, 3rd, and 5th. Only four days in all! In 1910 a good flow from about August 19th till 27th. On the 27th, luckily for myself, I took off forty-eight good sections for show purposes. All racks were rapidly nearing completion, and second racks required. But, alas! on the 28th the weather changed; on the 29th we had a heavy thunderstorm, followed by a week's rain and wind, which spoilt the bloom. I could not touch my hives again until September 4th, when I found the bees taking down the honey as fast as they could, so I only saved some nine or ten sections per hive, and those not saleable. I had, however, any amount of drawn-out sections and baits, which came in useful this last season. In 1911 the flow was from the end of July till August 20th. Owing to the second crop of clover being exceptionally good and the heather early, they overlapped, so that a great deal of blend was obtained. Against this, the heather-flow continued, and second and third racks of pure heather honey were secured.

Now this brings me to one of the curious points wherein heather differs so greatly from clover, sainfoin, limes, or other sources of nectar. By heather-honey, in the North certainly, and, I fancy, in most places, it is understood to be the honey produced by the bees from the nectar secreted in common ling (*Calluna vulgaris*). "Its consistency is peculiar to it alone; it does not run out when cut, for the contents of each cell are distinct hexagonals of delicate jelly. Its smell and flavour, which the uninitiated consider strong, are those of the aromatic odour of flowering ling. Its colour is a wonderful amber, which is brought into marked contrast by the surrounding snowy-white opaque cell-walls and cappings." There is also a honey produced from bell-heather nectar (*Erica cinérea*). A sealed section of the one, to look at only, cannot be distinguished from a sealed section of the other. The experiment has been tried by the Northumberland and Durham B.K.A. in Newcastle, but, on cutting, the veriest novice could tell the difference; to use a common expression, they are "as different as chalk from cheese." Bar the colour and whiteness of capping, there was no comparison. The bell-heather sample had not the same smell; it ran freely when cut, and when tasted was pronounced a flower honey. As is well-known, ling-honey cannot be extracted, whereas that from bell-heather extracts more easily than clover. In this instance, and in others, there was no difference in the colour of the two samples; but I have also evidence that it is often very much lighter in colour. I wonder whether the two species of Erica account for this (*E. tétralix* and *E. cinérea*). Now we come to a strange fact. That ling-honey, or, as we call it, heather-honey, varies both in flavour and colour North and South of the Tweed, is well known, that farther North being reputed stronger in flavour and darker in colour than that farther South. But the Tweed is not the boundary line. Mr. Avery, the well-known Secretary of the Cumberland and Westmorland B.K.A., writing to me, says: "I may say it varies considerably in colour and density in different parts of the counties, and, except on some of the lower hills, is not so dense as that from the Cheviots. The flavour and aroma, however, are quite equal to any, except that gathered on some of the more Northern Scottish hills." Again, Dr. Moore-Ede (Medicus), whose interesting observations and experiments at the moors are well known to all readers of the BEE JOURNAL, assures me that my honey from the foot of Cheviot is much stronger than his from Edmondbyers in the south of the county. He has also noticed a difference in strength and colour in honey from two moors, one ten miles north and the other ten miles south of the Tyne. I could go on quoting other instances where these variations have been observed. There is evidently no hard and fast dividing line, such as the Tweed; but how are we to account for these variations?

So far, I have only touched on the differences in colour, flavour, and density in heather-honey obtained from various moors, if we can hold the moors responsible. But now we come to a much more important difference. Two sets of moors, though only a few miles apart, may have

very different values to the bee-keeper as regards his heather-crop. For instance, take in my own district: Wooler may be described as lying on the north-east corner of the foot-hills of old Cheviot himself. Moor after moor rise one behind the other to the south and west. Across the valley of the Till lie a belt of moors, partly on a sandstone outcrop, and partly with a clay subsoil. Beyond these, again, is a long, comparatively low line of moors, on whinstone, commencing at Kyloe, opposite Holy Island and running almost due south for some twenty miles. If a stranger went from one set of moors to the others he would find it hard to select the best as regards the quantity of bloom on the ling. Yet no Wooler bee-keeper would ever dream of sending his stocks across the valley, though the roads are good. No, he sends them up awful roads to the Cheviot moors. The bee-keepers across the vale, with ling at their very doors, also send to the Cheviots. Why? I have asked members of my Association, and the answer has been: "It's no use your sending to the whinstone." The subsoil has always been held accountable for the difference in results, and the value of the two sets of moors, from the bee-keeper's point of view, viz., profits. I may mention that the Cheviots are augite granite. I thought "they had reason," as the French say, founded on experience, until I received a letter from Mr. McNally, whose letters in the RECORD we all know and appreciate, and who is essentially a "heather man." He tells me that all his honey is gathered on whinstone moors! Glenluce, where he lives, is almost exactly 150 miles due south-west from Wooler in a bee-line. Mr. McNally's bees work at about 500ft. above sea-level, and he is only a few miles from the sea. The Kyloe Moors, which our bee-keepers count of such little value, are only a few miles from the sea, and run from 400ft to 700ft. above sea-level. What we fail to get on the East coast Mr. McNally gets—and obtains in paying quantity, moreover—on the West! The conditions are apparently the same, but the results are very different. Mr. Avery, writing also of the West, considers "the whinstone yields the best quality." Why? Has our old friend "the Gulf Stream" got something to say to this result? Now, I will give an instance where the subsoil is clearly the chief factor. A Yorkshire friend writes: "The chalk marl and limestone sides of our dales are much preferred to the sides with sandstone subsoil. We get the finest grade from the ironstone subsoil and the finest flavour in existence. The density is one solid jelly." Many old bee-keepers say that heather on freestone or sandstone produces honey freely; but the quality is inferior to that from whinstone or limestone, though the quantity is, as a rule, greater. What is the reason?

As a surface soil, peat seems to be a necessity for the growth of heather. That heather and heaths both grow best in a peaty soil there is no doubt. The greater the depth of peat the better and stronger the plant, and in consequence the more nectar secretion. Where there is only a few inches of peat on the surface there does not appear to be much nectar secreted in either heather or heaths.

Talking to a bee-keeper the other day, he suggested that drainage had a great deal to do with this question of variableness in heather honey. At the moment we were discussing the poor value of a neighbouring moor, but as the subsoil was clay, my gardener friend's theory that "want of drainage meant cold, and drainage warmth, thereby affecting the secretion of nectar in ling" was probably correct in this particular case; and it is borne out by some notes from Ayrshire. There the moors yielding best results are some 1200ft. above sea-level, on limestone with a good, dry surface. From some bogland moors, about 700ft. up, with wet, boggy surface, the results are not nearly so good, the honey differing in density, colour, and flavour in the two cases. Again, in Aberdeenshire, the darker, stronger honey is from the high moors, the lower wet moors yielding a much poorer quality. One very experienced heather man from Yorkshire (Whitby district) says, "The higher and drier the moors the better the yield. The low moist parts of the moor never, to my knowledge, yield any honey." That there is a great deal in this theory I am convinced, for "a wet season makes a sample lacking in consistency" are the words of that well-known authority, "D.M.M., Banff." A bee-keeper who sends to the Berwickshire moors gives "a friable loamy clay" as his ideal for a subsoil for the heather plant or shrub. This question of drainage I think should be taken in conjunction with the growth of the plant itself when seeking for the reasons for the variations in the honey. There are three distinct styles of growth to be noted in ling: First, a dry scrub which flowers fairly well but yields a small supply; second, a tall, rank growth in damp places and on low-lying moors, which gives a very poor return, and the sample is thin, watery, and of poor keeping quality; third, the ling at its best—miles, aye leagues, of the famous purple heather. Purple the royal colour befitting our most regal honey.

Drainage, therefore, has a good deal to do with good results, but with drainage, so to speak, equal subsoils play an important part. Granite is, beyond all question, always excellent. Ironstone and gritstone

have strong claims to be considered among the best. Whinstone, as I have shown, seems to give different results on the East and West Coasts, though it is admittedly better than sandstone, and probably better than limestone. Chalk marl and limestone seem better than sandstone, while a loamy clay has a good claim as an excellent subsoil. But even now I don't think we have got to the bed-rock of what is the real reason why some heather-honey is so very much better than other.

Altitude would seem to be a very important factor in obtaining the best results, but here again we are met by much conflicting evidence. In Cumberland and Westmorland it is stated that the best quality of heather-honey in the two counties is secured from the lower ranges, that from higher up on the mountains is lighter in colour and not so dense. Notes from Berwickshire support this view. To the contrary, in the Cheviot and Tweed Borders, Ayrshire and Aberdeenshire, the North of Scotland, Derbyshire, and Yorkshire, and elsewhere, there is a consensus of opinion that the best and purest ling-honey comes from the high moors. One friend is very emphatic on the point. He says "altitude is a most important factor in securing the very best sample. Heather, even if abundant and showing a wealth of bloom, does not give genuine heather-honey below, say, 500ft., and gives the best when grown at over 1000ft. Derbyshire (Peak district), the lower stretches of Banffshire and Aberdeenshire, to take some samples, yield honey lacking in density, flavour and aroma. The honey in some of these cases is darker and duller. My Ayrshire friend describes the honey from the lower wet moors in that county as "muddy." On some of the Derbyshire moors, which run on unbrokenly into Yorkshire, however, the honey is described as "very dense (jelly-like) rather bright, not quite so dark as some Scotch." But these moors are from 800ft. to 1000ft. up. The Yorkshireman's summary, "the higher and drier the better the yield," I have quoted before.

Now, may I touch on the subject of the granulation of heather-honey? I have never seen my own do so, but perhaps it never gets the chance—is eaten too quickly. A lady in my neighbourhood lays by large stores of it at a time, and keeps it for years, and she only occasionally finds it granulated. One heather man says, "I have kept a section for two years by putting it on a plate and covering with a basin, cutting it in two, and laying it on its side on the plate, and it was absolutely free from granulation with *no* running on the plate, but just the same as if taken from a hive. I have kept two sections for five years with slight granulation." Another, with twenty-five years' experience, says "pure heathey-honey, 100 per cent., will hardly granulate at all." Mr. McNally says it will granulate if kept in a low temperature (both comb and pressed). "D.M.M." says "well-ripened heather-honey does not candy readily." A man whose opinion I value says of granulation: "The levulose never; after about six months the dextrose will granulate in large granules and leave the levulose liquid, having then the appearance of golden syrup mixed with rough oatmeal. I have often seen sections that exactly answered to this description. Pressed honey in some seasons seems to granulate fairly quickly, and has also been noticed to *decrease* rapidly in bulk when cold weather comes on. Pressed heather-honey also varies in colour and consistency, as the following descriptions will show. One lot is described as "a muddy-brown; it is deficient in density, so much so that when pressed and put in bottles no air bubbles are retained in the honey, and of course flavour is lacking." Whereas the other is described as being "of a bright, sparkling amber, density and flavour first class, and altogether quite a different article; also, when good honey is pressed and put into bottles, a great quantity of air-bubbles are retained, making it look like soft-soap." A good honey, when pressed, may be said to fall in lumps rather than run.

Now here is another case of the contradictiousness of heather honey. Granulation is considered a sign of purity in honey. But is it so with ling-honey? One heather man goes so far as to say, "My opinion is heather-honey, *really pure*, will not granulate at all, and heather-honey generally so-called pure is not really so, and the less pure the more the granulation." He is corroborated by many. "The least mixture of mustard which blooms at the same time as the ling will cause all honey to granulate very quickly. A mixture of any other will also cause it to granulate smoothly" is the result of observation in Yorkshire. That an early heather-flow does not yield heather-honey of the purest, because other sources of nectar are available at the same time, is true—witness last season. One wise man prefers to send to extra high moors, to avoid the risk of his bees gathering from other sources. Granulation gradually increasing according to the amount of other than heather in the cells seems to sum up the results of many observations. Anyone can test this by sampling a section of heather-blend that has been kept some time; the ling portion will be found liquid, while the flower parts of it will be granulated. Regarding reliquefying granulated heather-honey, Bro. Colomban, of candy fame, whose skill nobody will dispute, notes that heather-honey does not behave like other honeys when

reliquefied. It loses both mellowness and consistency.

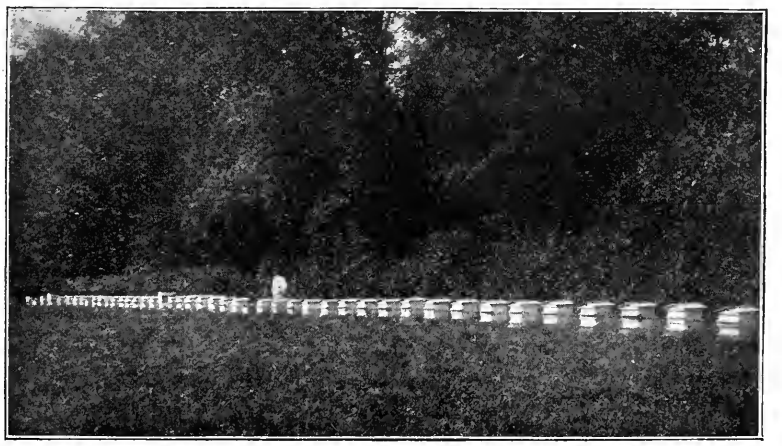
Heather-honey as a winter food seems to be a vexed question lately started in the "B.B.J." Some declare it is deadly, others that it is excellent as such. I think that it only adds one more to the many puzzles that a study of heather-honey confronts one with. In some localities, and with certain grades of heather-honey, it may be a bad winter food, but most assuredly in others it has been for years the staple store, with no ill effects.

(To be continued.)

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

Viewed merely as a picture, Mr. A. Sandy's apiary, which we present this week, may leave something to be desired,



MR. A. SANDY'S APIARY, DRAYTON, ABINGDON, BERKS.

but as a neatly arranged and business-like bee-farm its appearance is admirable. The long row of hives, sheltered from bleak winds by trees, apparently are all of uniform pattern, and the bees have an unimpeded flight over a grassy expanse to an abundantly supplied foraging ground. Mr. Sandy's short account of his career as a bee-keeper is full of interest, and shows what a man possessed of energy and capability can do with bees. We are pleased to hear of his success, which he well deserves. He says:—

"My first experience of bee-keeping dates back to the 'eighties, when, by chance, I happened to see a bee-keeper manipulating a frame hive, and became quite fascinated with the hobby. My bookseller introduced me to Cowan's Guide Book and the BRITISH BEE JOURNAL; the latter has given me the greatest possible amount of instruction and interest week by week, as it touches upon every conceivable point in practical apiculture. Unfortunately, however, I came to grief, losing my whole apiary through an outbreak of foul brood. This gave me experience. For the space of six years my interest, while never abating, was not gratified until, in 1896, I renewed my acquaintance with bees by taking a stray colony from a hollow elm tree, with about 12lb. of honey. The honey was converted into money, and then into syrup, foundation and a modest array of appliances. A hive in which to house the swarm I constructed from grocers' boxes and similarly four other hives were made the next season, and were stocked in the autumn with driven bees. In the spring of 1898 I had five strong colonies. By this method my apiary has paid its way in advance. Three of my hives have obtained prizes in shows. In 1900 I became a third-class expert, and in 1901 obtained the B.B.K.A. second-class diploma. Suitable timber for hive-making speedily superseded boxes, and my apiary grew until in 1910, when Captain McKilliam became my partner, it comprised thirty-six colonies. We then decided to work for increase instead of surplus, with the result that we began last season with 100 colonies in three apiaries, the largest of which is seen in the photo with Captain McKilliam standing at the back. He prepared all the hives from timber cut to proper dimensions, and sent in the flat. The bees have some of the finest bee forage to work upon, right in the centre of apple and cherry orchards, at Milton Hill, Steventon, and Drayton in North Berks, and have given us a great quantity of the very best honey perfectly ripened."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

LEGISLATION FOR BEE DISEASES.

[8417] Although I have refrained from taking part in the discussion in the B.B.J. on Bee Legislation for some time past, I am still following with interest the course of events. I have felt strongly that nothing would be gained by filling your columns with a subject that had been already almost "written to death," but, as the crisis appears to have arrived, and although very busy, I feel compelled to say a last word on the subject.

I have read the draft of the proposed Act in the B.B.J., and must say that I have much more sympathy with it than with that which appeared in the "Smallholder." Perhaps my dislike for the latter is more imaginary than real, owing to the unpleasant—made in New Zealand—flavour about it, as well as the feeling that this new, up-to-date weekly was usurping a position that past services entitled our own "B.B.J." to.

I still maintain, and Reports of County Associations continue to support my argument, that the County Associations (a feature of the "Old Country's" bee-keeping, which the Colonies to the same degree do not possess) are doing excellent work in extinguishing foul brood, and I honestly believe that if there was a strong Association in every county this disease would soon be at vanishing point. I know that the "obstinate" beekeeper is the bogey trotted out, but I have, personally, never met one of them yet—the other extreme has been my experience of bee-keepers.

The "Isle of Wight" disease is quite a different matter and calls for immediate and strong action by the Board of Agriculture, but the Inspectors appointed by the Board should on no account be allowed to enter a healthy apiary, but, as in the case of the Diseases of Animals Act, they should confine themselves to the cases notified according to law.

It would be as disastrous to the healthy apiary of a large bee-keeper for an Inspector to make promiscuous visits to diseased and healthy apiaries as it would be for the Board's Inspector to visit a farm, where several animals had died of anthrax, and then visit the farm of another gentleman who had spent years in raising to perfection a valuable herd of Shorthorns, or any other noted breed of cattle, and personally examine the healthy animals there.

As I am assured by the final draft of the Bill that the Bee Diseases Legislation Committee has welcomed honest criticism from those who have the best interests of apiculture at heart, I write to say that I agree with them that exemption of certain bee-keepers could not form part of any Act, yet in practice I do not see why, under suitable and well drawn up bye-laws, the healthy apiary, after being once thoroughly examined, should not be exempted until its condition is suspected, or the bee-keeper himself notifies disease.

To take a somewhat parallel illustration, I daresay many fellow-teachers have vivid recollections of the times when our schools, being found efficient, were exempted from examination, whilst others not reaching the required standard of efficiency, being, perhaps, not so favourably situated as ourselves, were obliged to undergo the ordeal of an annual examination.

With regard to the straw skep, I am again with the Committee in the view that the time is not yet ripe (a real live Association in every county may hasten the day) for their abolition in England, yet I see no reason why it should be a hardship for any Inspector to condemn a straw skep to be driven *at the end of the season*, when its combs appear to be a year or more old.

The exemption of super honey from destruction, and the notice of the proposed visit, are other strong points in its favour, especially the latter, as, although in a late issue of the "B.B.J." a once prominent Colonial Inspector indulges in praising the correct behaviour of his class, still his view, and that of the persons who received the summons and paid the fines for keeping bees in straw skeps, might not exactly coincide.

There is still one matter which I think the Committee would do well to reconsider, and that is the matter of compensation. I have been much struck in the reports of the working of the Irish Bee Pest Act, at the number—a very large number indeed—of small sums, from 2s. 6d. to 5s., that have been paid to the cottager bee-keepers of Ireland by several counties, which has, no doubt, been the means of enabling these poor cottagers to replace the worthless bees and skeps destroyed. Those who are well able to bear the loss, may, of course, if they wish, refrain from coming on the Compensation Fund, and in that way benefit their poorer neighbours, as the fund will, no doubt, be a small one. I admit that at one time I thought—I may

say I almost hoped—that between the proverbial two stools ("Smallholder" and B.B.J.) the proposed Act would fall to the ground. I find now that they have joined forces, but, as the "Smallholder" says, the proceedings at the interview at the Board of Agriculture were of a confidential nature, and the B.B.J. says that "a common basis has been arrived at," without saying what it is, it appears to me that while they appear to trust each other, they have still no confidence in the general body of bee-keepers outside, which is a mistake that may afterwards be regretted.

I am not sure but that the B.B.K.A., by their present action, will bring into being a rival, which may finally wipe them out of existence, at least so far as an examining body is concerned. The Board of Agriculture will, no doubt, as most Boards of the kind usually do when once they take up matters—octopus like—grasp all within their reach, and not only examine, select, and appoint their own Inspectors in Horticulture and Bee-keeping, as they do in Ireland, but also finally run the whole show, and in the end follow the lead of Australia, as in the case of Mr. R. Beuhne, by translating your able junior editor to the Board of Agriculture.

The bye-laws will no doubt be the crux of the coming Bill, as regards its smooth working, and the fight will centre around these in every county. In order that we may be prepared for this contingency by organisation, at the request of several bee-keeping friends, may I ask all bee-keepers in Carmarthenshire who may see this letter, and are in favour of the formation of a County Bee-keepers' Association, and are willing to help in their own districts, to kindly write to me or Mr. Davies, Crossing, Abergwili, Carmarthenshire, who is making an appeal in the local papers? Should the replies received justify us, steps will at once be taken to call a preliminary meeting at some central place to discuss the prospects, etc., of resuscitating the old Carmarthenshire Bee-keepers' Association. —Herbert Samways (2nd Class Expert B.B.K.A., 1st Class Cert. R.H.S.), Maesybont, Llandebie, Carmarthens.

[We have every confidence in the Board of Agriculture carrying out inspection in an efficient manner, and have no doubt that the Inspectors would receive the same instructions as they have in respect to the diseases of animals. There would be no necessity for an Inspector to visit a healthy apiary at all, and he would certainly not do so. The common basis arrived at in the conference is practically embodied in the Bill promoted by the B.B.K.A. (page 101) and the statements made by the Chairman at the annual meeting of the Association (see pages 121 and 122). The action of the B.B.K.A. has been forced upon them by bee-keepers and the affiliated Associations, who have passed resolutions urging the parent Association to take action in the matter, more particularly in view of the spread of "Isle of Wight" disease. Our correspondent is wrong in supposing that the B.B.J. and "Smallholder" have joined forces, for we have never approved of the action taken by the latter paper, as we considered that only the Committee appointed by the B.B.K.A. fully represented the views of bee-keepers in the country. This committee has worked independently in accordance with the requirements of the late President of the Board of Agriculture (Lord Carrington, now the Marquis of Lincolnshire), and we are pleased to know that its recommendations are likely to be carried out. The Bill published by the "Smallholder" was an impossible one, and the numerous letters which we have received about it from those who have been canvassed in its favour, clearly show how strongly bee-keepers objected to it. The B.B.K.A. Bill embodies all that bee-keepers want, and should have their undivided support. We are glad to find that an effort is being made to start a Carmarthenshire Association.—Ed.]

HOT BRICKS AND BEES.

[8418] I have read with interest (No. 8379 page 83), referring to the warm brick method of treating stocks that have run down in spring, but this must entail a lot of labour which, in many cases, would be worth more than the value of the bees. In my practice I have adopted the principle of the closed comb, as found in a skep, to my frame hives. I use what I call spacers, or closed ends and tops. The bees are then confined between each comb, with little radiation of heat. If the bees are fed gently below, it is astonishing how quickly they will build up with such an arrangement, especially if the colony is headed by a young queen. It is conceded by all practical bee-keepers that skeps are warmer homes for bees than frame hives as ordinarily used, and there is very little doubt about this, but frame-hives are just as warm when these spacers are used in them.—R. Grose, Bodmin.

INSURANCE.

[8419] Have you ever visited "Lloyd's"? Needless to say, unless you are one of the initiated you may not pass the swinging "guichet." But we will suppose you have business to transact with one of the "members." You mention his name to the courteous janitors, straightway it is passed on to the rostrum where a commanding figure in uniform immediately "shouts" your friend. But, good heavens, what a shout! It seems to echo and

reverberate in every corner of the room. Shades of the Seven Sleepers of Christendom and Rip van Winkle! Their occupation would have been gone had they been within his hail. Sufficient, however, it is that it has answered your purpose, and has attracted the attention of he whom you desire to see. While you are holding your conversation, you notice the crowd surging up and down the stairs, and two things must appeal to you: How vast has this association grown, since a little over two centuries ago the merchants used to meet at the "Kauphy house"; and again, how is all this wonderful work organised? But there are subjects I dare not discuss at the moment. Although exceedingly interesting, it would be too complex for this article. I must hark back again to the purposes for which these notes are written, and only deal with that minute proportion of the "risks" which affect you and I as to our mutual industry.

Now, the unit of the "British Bee-keepers Insurance Scheme" is he who insures his hives, and of course his subscription. Presuming that a bee-keeper desires very wisely to cover himself against all those dreadful perils that I mentioned in the first of these articles, how is he to do it? The scheme is simplicity itself. If he is a member of a county association, he writes to the Secretary and encloses a remittance of one penny for each hive to be insured, the smallest amount which can be received being ninepence—that is to say, if an owner has only four hives to insure he must remit ninepence, the minimum premium; but if he has twelve, at one penny each hive, it will only cost one shilling. Further, if he is not a member of a county association he must remit one shilling extra, say, as in the first example, one shilling and ninepence in all. If he is not aware of the address of the county official, he may remit to the Secretary of the British Bee-keepers' Association, at 23, Bedford Street, Strand. He will then receive a form which he will duly sign and return to the Secretary, by whom it has been sent. Or it is often more convenient to hand the subscription and form, duly executed, to the expert on his tour, which when received by the Secretary of the B.B.K.A. completes the insurance unless declined, which exceedingly seldom occurs. The insured is then covered against any damage inflicted by insurers' bees to a third party not exceeding £30. It is difficult to scheme a more simple plan, and the premium is so small.

In the event of damage, send particulars of your claim to 23, Bedford Street, and if the underwriters are satisfied that the claim is just, it will be paid in about ten days' time, or sooner.

Now, it is quite reasonable that they who contribute their insurance premiums should know how, in the event of damage, payment is guaranteed. In the first place, the Bee-keepers' Association take out annually a policy covering all claims under the third party arrangement up to £5000, which amount, I think, most of my readers will agree, is much over the compensation likely to be demanded. In the second place, to guarantee the faithful transaction of all business which passes through their hands, the members of "Lloyd's" have each to give security of from £5000 to £10,000. When any "business" is offered the members write their names on to the policy, taking a certain share of the risk. Hence the term "underwriters." For instance, Smith agrees to take £500, Brown £1000, Jones £1000, and so on. Therefore, if you take the aggregate of the guarantees of the underwriters, that of itself is a fair security, but in addition to this the brokers who serve our association so arrange that the insurance in which we all are so interested is further underwritten by a second company (reinsured) whose capital amounts to £100,000. I think, therefore, that the subscribers who venture their one penny per hive may sleep calmly—nor fear if there should be any claim that it will not be paid.

It may be of interest to relate that last year 12,409 hives were insured. There were but few claims, and these were promptly remitted to the satisfaction of all concerned as acknowledgements certify.

There only remains one word more to be said: "Insure." "You never know your luck" is perhaps rather a slangy expression, but it just expresses the idea. If you know that you have a strong backing behind you, should it happen that you do get into trouble, you can then well afford to be "cheeky." —J. Smallwood.

HOW THE CORBICULA IS LOADED.

[8420] I recently repeated my experiment, described in the "B.B.J." of Dec. 14th, 1911, of loading the corbicula of a dead queen humble bee with pollen, by means of the auricle, and I found that the pollen stood up and required to be patted down so as to lie on the corbicula as it does in nature. Evidently this patting of the pollen in the corbicula is an essential part of the process of loading the corbicula, and during the recent warm weather I saw some British Golden honey-bees carrying it out with the metatarsus of the middle leg as they gathered pollen from the laurustinus.—F. W. L. Sladen.

WINTERING BEES IN MICHIGAN.

[8421] There is considerable difference in the winter in different parts of this

State, since it extends over some 3½deg. of latitude. The cellar is generally found to be the best place, but some construct large winter cases, and pack the hives with chaff or sawdust. Bees are usually confined pretty closely for four months, as when they are once placed in the cellar they are not removed until spring. The great problem is proper ventilation, and an even temperature of 45deg. Fahr. The past winter was an extremely cold one, but better than when we have warm days frequently, which causes restlessness and over-consumption of food. Disease and inspection are likely to reduce the number of bee-keepers and make those who wish to continue in the business more expert.—E. Ewell, Litchfield, Mich.

Queries and Replies.

[8302] *Bee-keeping in California.*—Would you kindly give your opinion as to California for the settler, especially as regards bee-keeping and the best districts? I am thinking of going there, and knowing that you have had some experience there, I venture to ask you.—Thanking you in anticipation.—A. Gardner, Norfolk.

Reply.—There are many parts of California good for bee-keepers, especially among the foothills. Some of the best honey-producing counties are, in the order named: Ventura, Los Angeles, San Diego, Orange, and Santa Barbara. The yield, however, is not certain every year, as it depends on the amount of winter rain, and frequently it is difficult to keep bees through a dry season. The rainfall varies from 7in. to 41in., and a very dry season comes every seventh year, but at least 14in. is necessary for a yield of nectar, and if rain comes as late as March, good crops are secured. If less than that amount falls during the winter the crop is a failure. Some of the leading bee-keepers estimate that they can reckon to have one very good season and two pretty good ones every seven years. The work, however, is hard and dreary, as bee-keepers have to put up with a great many inconveniences, for they have to rough it sometimes far away from neighbours. The climate is excellent, and a living can be made if one happens to hit upon a good locality, which is difficult unless you would be prepared to wait and look about for such a place. You would, however, have to be very cautious and make enquiries before you buy land, as there are many agents who would sell it to you, representing that it would do for bee-keeping when it was quite unfit for this purpose. You would have to turn your hand to anything, as help is extremely difficult to get, and if you had to pay for it bee-keeping would be unremunerative.

[8303] *Keeping Bees in Observatory Hive.*—Your kindness in answering two former queries of mine emboldens me to make one more: I am making a two-frame observatory hive and would be glad to know how long it would be safe to keep the bees in it in the summer. I am providing for warm covers and practically air-tight doors, which will be lined with carpet-felt. Would it be safe to put in two frames, one with brood and plenty of bees, and keep them there until the latter raise a queen and some brood? If so, I could make a new stock of the contents of the observatory hive, transferring to an ordinary frame hive and borrowing a comb or two and more bees from other stocks. What is the latest time, in a normal summer, it would be safe to do this, and could I do it after the honey-flow is over? The observatory will be kept in a wooden building and the bees go out through the walls.—Abejero.

Reply.—You could keep the bees as you suggest, in the observatory hive, until immediately after the honey-flow, and then make up to a stock, being careful to nurse them by means of stimulative feeding.

[8304] *Honey from Ivy.*—I am a bee-keeper of inconsiderable experience, but have kept bees for two seasons. During last winter all my bees died, and in May last, "a bolt from the blue," in the form of a large swarm, took possession of my empty hive. During these few months I have learned one thing: In the late weeks of the honey-flow a very large amount of honey is collected from the ivy, and I should like to know: (1) Is this honey fit for human food? (2) Is it fit or good to use for bees' winter store?—E. B., Westbourne Rectory.

Reply.—The answer to both your questions is Yes.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Sugar for Bees.—Mr. Dadant, after discussing this subject, comes to the conclusion that: "Good sugar syrup, or properly-made sugar candy, is equal to the best honey for bees that are to be confined a long time, whether it is for transportation or for winter. But for spring feed for breeding the requirements are entirely different. No one can consider syrup as superior, or even equal, to wholesome honey at that time." The distinction can be appreciated. In the first case the food goes to keep up internal heat with a limited repairing of tissue in the adult bee; in the other the food consumed builds up the framework of the young bee.

Painting Foundation.—The *Review* advocates painting the sheets of founda-

tion with wax in order to strengthen them. "Use a 2in. paint brush and run the melted wax along the sheet with a few light strokes, followed by heavier ones. This leaves quite a rim on the side walls; the more the better. Rub about half way down the sheet." Mr. Poppleton claims that this painting prevents the sheets from warping or bulging, and that it greatly strengthens them, while all the wax rubbed on is utilised by the bees in drawing out the cell-walls. He considers it indispensable in his own apiary, where he has used it for years.

Inspectors' Association.—All apiary inspectors and official entomologists of the United States and Canada are urged to join this body. In the fight against disease there, as here, it seems each man is a law unto himself. There we find an approved inspector actually transferring diseased combs from unhealthy to healthy hives! Here we have, or at least had, an expert who went about with a small bottle of diluted carbolic acid, treating diseased stocks by spraying some of his solution into diseased cells! Such men are a menace to apiculture, and an association whose organisation "would increase the efficiency of apiary inspection, and bring about greater uniformity in the laws and more active co-operation between the various inspectors," must do a world of good. A thought strikes me! I wonder now whether it would not be a good thing if an Experts' Association could be formed among the 3,000 B.B.K.A. experts?

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Notices to Correspondents.

THEODOSIA (Millbank).—*Flour candy.*—No, the flour will not injure, but help the bees.

S. E. A. (Derby).—*Bees in Spring.—Uniting.*—Bees should now cover four or five frames at least. Do not use scented syrup for uniting, as this may induce robbing. Dust the bees well with ordinary flour.

F. R. (Staffs.).—*Exhibiting Bees.*—We presume you mean bees in the observatory hive class. It is essential that a queen should be with the bees on the combs, but the breed of bees is immaterial unless specified in the schedule. Form for insuring your bees has been sent.

Suspected Disease.

W. H. W. (Essex).—The bees are suffering from "Isle of Wight" disease. You had better destroy the stock, and get a swarm later on. Do not omit to destroy or thoroughly disinfect everything that has been in contact with the diseased bees.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, W.B.C. Hives and best quality Bees.—WOOD, expert, Arnold, Notts. t 93

FINEST LIGHT HONEY, in 28lb. tins, 70s. cwt.; samples, 3d.—WAIN, Thorpe Bank, Wainfleet. t 4

SURPLUS STOCKS.—Having had good winter with Bees, have several healthy Stocks and Nuclei for sale at 10s. to £1 each, packed free by expert; Italian and English Hybrids.—JOSHUA CREWES, Beekeeper, Truro, Cornwall. u 8

FIRST-CLASS EXPERT DISENGAGED, requires work amongst Bees.—SWABEY, Bracebridge Heath, Lincoln. u 7

ENGLISH HONEY, screw caps, tie overs, few Sections, 8s., 9s. doz.—DAVIS, Westholme, Shepton Mallet. u 5

LIMNANTHES DOUGLASSII, extra strong large plants, soon in full flower, 50 7d., post free.—LITMAN, Castle Cary. u 6

WHAT OFFERS?—Ten dozen deep, fifteen dozen shallow combs, twenty dozen drawn out Sections, two dozen Feeders, ditto Super Clearers, ditto Excluders, one dozen best Hives, flat Sections and Frames, Honey Refiner; reducing, removal, all clean, guarantee; any offer?—VICAR, Ulrome, Hull. u 4

WANTED, Bee House, 8 by 6 by 6, or nearest, cheap; full particulars. — CLEVELAND HOUSE, Chatteris. u 3

A FEW 1911 QUEENS for disposal, owing to joining small stocks, English Blacks, Italian and Carniolan Hybrids, 6s. each.—ADAMS, Tilford, Heathhurst-road, Sanderstead. u 2

OLD BEE BOOKS for sale, by public auction, on 6th April 1912.—Bees and Bee-keeping, 2 vols; Cheshire, My Bee Book, 1842; Cotton, The True Amazons, &c., 1752; Warden, The Management of Bees, by Dr. MacKenzie; Huber on Bees, fine copy, 1808; White on Bees, fine copy, 1771; Female Monarchy, 1744, Thorley; British Bee Journal, first 12 vols; well bound.—A. B. ALLEN, auctioneer, Blair Atholl. u 1

MEDIUM Coloured Honey, in 28lb. tins, 56s. cwt.; sample, 3d.—ANDREWS, Longthorpe, Peterborough. t 00

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

THE CONVERSAZIONE.

(*Continued from page* 135.)

Let me now take some other perplexing points regarding the secretion of nectar in ling. What would be called and rightly considered a good working day for other flows may prove the reverse on the moors, and *vice versâ*. It has been proved that ling secretes nectar at a very low temperature; bees will gather nectar if procurable, and consequently often commence work with the thermometer only registering 48deg. or less. One can watch them coming home with distended abdomens, proving that a flow is on, but, alas! many fall short, get chilled, and never rise again. When the sky is completely overcast with clouds, bees work freely all day, not even stopping for light rain; but on a bright day, whenever heavy clouds obscure the sun temporarily, they rush off home; the result is broken time and a loss on the intake. Bees at the moors seem very sensitive to these conditions. One year it was noticed that the flow only kept bees busy between the hours of 8 a.m. and 10 a.m. On the same moor the following year bees worked all day long. Both were bad years. In both the climatic conditions were nearly the same—cold northerly winds, the air humid, and evaporation very slow. The first year the wind was mainly from the N.W., the second year mainly from the N.E. How can we account for the difference in the hours of nectar secretion?

One careful observer thinks that nectar is only secreted under certain humid conditions; and, judging the flow by the bees' work, states that the bees work early to late, but mid-day predominates. Another, whom I envy, because he spends his holidays with his bees on the moors, sums up a long experience and some very careful observation in the sentence, "Everything depends on the airt of the wind." His version of the old fishing rhyme has a great deal of truth in it.

"When the wind is in the North,
Then the bee goeth not forth;
When the wind is in the South,
It blows the nectar into the bee's mouth;
When the wind is in the East,
There's much hard flying, but no real feast;
When the wind is in the West,
Then the flow is at its best."

He pins his faith for the nectar-flow to heat: "Then the inevitable and glorious heat-wave comes along—five, six, or seven days—and the harvest is secured." Heat with a south or west wind is the desire of his heart.

Most bee-keepers, I imagine, would not expect much of a flow on seeing the ground white from a heavy hoar-frost, and the temperature never above 58deg. all day; certainly they would not expect a flow until the sun had warmed things up a bit. Yet on such a day a hive on scales gained 10lb. between eight and ten in the morning; after ten o'clock the flow ceased. A frost in this case did no harm, but elsewhere it has been noted to have harmful effects. "Honey from low-lying moors is not nearly so good, from the fact that early frosts often settle in low-lying places while the higher ground is quite free. This often accounts for a sudden stoppage of work, though to all appearance the weather and bloom is all that could be desired." One very cold year, with clover in bloom close to the hives, the bees worked at the ling but would not look at the clover. Last year, which was a very hot one, some bee-keepers, with their stocks near the edges of the moors, got nothing but a clover-heather blend! Does this prove that heat is a necessity for the secretion of nectar in clover? With an intermittent heather-flow bees will work at clover when the ling is not secreting, but seem to prefer the ling if obtainable.

Other factors to be taken into consideration, regarding the quantity and quality of heather-honey, are sunshine, exposure, and shelter. What I mean by this is, the heather should be exposed to the sun, the hives should be in the midst of the heather if possible, but the hives themselves must be sheltered. Sunshine is needed to ripen the bloom, and help in the secretion of nectar, for there is not the smallest doubt that a heat-wave is conducive to a good flow, and it is generally, though as I have shown not always, on the hot days, whether continuous or with intervals, that the crop is secured. A stance in a valley gives shelter, and the laden bees can float down to their homes instead of having to struggle uphill. If on a level upland moor, or plateau, hives should be placed within "stells" (circular walled-in enclosures for sheltering sheep), which will protect them from the wind at all events. Regarding sunshine, valleys running east and west claim one advantage over those running north and south, and that is that the bloom lasts longer. The slopes facing towards the south are first covered with bloom. After a distinct interval those to the north burst into bloom. This means a longer heather season, with the greater chance of securing a late flow should it come along. As one of my members described a certain moor: "It is favoured in having two crops." In a valley running north and south, one slope gets the morning sun, and the other the evening sun, while both get the mid-day sunshine; but the bloom, on both slopes

alike, begins and ends about the same time.

A sentence of "D.M.M.'s," in an old paper he kindly lent me, I think deserves attention. Writing on this point of sunshine, he claims that heather facing south or S.W. yields better returns, and, he is inclined to think, "*a better quality of nectar.*" Has the subject of the quality of nectar, as affecting honey, been investigated? If it has, I apologise for my ignorance; if it has not, is it not worthy of research? It may lie at the root of the mystery. For instance, some heather men account for ling-honey this last season being rather lighter in colour than usual from the fact that the drought checked the blooms coming fully out. The blooms not being fully developed might possibly result in the nectar not being properly protected, therefore not so well ripened. Could Prof. Bonnier's opinion on this point be obtained?

As far as I can gather, in the North and Midlands, in Scotland and Ireland, Ericas or heaths are repudiated as a source of supply, only being found in small quantities on the moors. By the way, two at least of my members challenge whether bees can gather the nectar in bell-heather at all. They have lived all their lives on the moors, and have never seen our little friends touch Ericas. In Devonshire, however, on the lower stretches of Dartmoor, heaths and heather both abound; but as the moors rise the ling predominates. A great deal of this Dartmoor honey is blend, though the true jelly-like heather-honey is obtained also, but it is not equal to the heather-honey of Scotland and the North. From Somerset I gather that large quantities of heather (almost entirely bell-heather) grow on Exmoor and the Quantocks, and a little on the Mendips. The two former run to over 1000ft.—subsoil chiefly old red sandstone. Heather-blend is obtained in fair quantity on the southern slopes of the Quantocks, and the valley between them, and Exmoor. The crop, however, is uncertain, and it is not considered profitable to move bees to the heather districts. Very little surplus is obtained on the Mendips. Insufficiency of pasturage within easy reach, absence of ling, and stocks not properly prepared, are three very good reasons given to account for this. As the heather-honey of Somerset is usually mixed with that from other sources, it is seldom so thick that it cannot go through the extractor.

Notes from Ireland corroborate most of the points noted elsewhere. Igneous basic rocks, locally called greenstone, furnish a good subsoil. The heather grows right to the summits of the mountains, and we should call them high moors, the more outlying glens producing the stronger and darker honey. Pressed honey granulates fairly quickly, but comb-honey properly kept will hardly granulate. Ireland adds her quota to the conundrum list. Can anyone explain why, last season of all others, heather sections, though well sealed and ripe, were extremely light in weight, not well filled at all? Also, why, "in the last two years the heather-honey was not nearly as dark as usual in colour?" The altitude, subsoil, drainage, &c., could not have suddenly changed, but the colour of the honey did! Why?

Before closing my paper, may I touch on the subject of heather honey on the show-bench? I have shown that ling-honey is absolutely distinct from bell-heather honey, although we find them both commonly designated heather honey, and in honey competitions both sorts are usually shown in the same class. Is this quite fair? Botanists tell us of the many differences between the two. "The extensive genus Erica (heath) contains no plant possessing useful properties. *Calluna vulgaris* (ling or heather) is astringent, and is sometimes used for dyeing." As plants they also vary. "Linnæus placed both in the genus Erica (heath); but later botanists have, however, made of it a distinct genus, and not without reason." To begin with, there is only one species of ling or heather, while there are two common, *E. tetralix* (cross-leaved heath), largish pink bells, and *E. cinérea* (fine-leaved heath), smaller magenta bells, and several more rare species of heaths. Their outward differences are apparent to the eye of any bee-keeper, while the bee-keeper who is also a botanist can tell us that they vary as much as the Bombi differ from *Apis mellifica*. Heaths flower and the honey is stored some weeks earlier than ling honey, and therefore under more favourable climatic conditions; the farther south the better these conditions. Taking all this into consideration, would it not be quite possible to have separate classes for the two varieties of honey? Heather-honey from ling has a consistency, flavour, and aroma of its own, quite distinctive from all others. That from heaths, except in colour, and that not always, has not the faintest resemblance to it. It tastes, and extracts like a flower honey. Why class them together? The careless use of the word heather, I suppose, had something to do with it. Call the latter heath honey if you like, Erica honey would sound rather strange perhaps, but Bell-heather Honey would look fine on a label! But *do not* call it heather honey.

In the same way, I think, a very clear distinction should be drawn between the genuine article and blends. Because a hive happens to be on a moor, it does not follow the bees are working only at the ling. Wild thyme, heaths, or even clover, may be within reach, and the nectar in

them being secreted simultaneously. More care should be taken in classifying for the show bench. Blends should be in a class of their own. Honey from ling, and ling alone, I think, should have the title of heather honey. Heather men in the North I am pretty certain would vote solid for this claim of our main-crop, and of what we believe to be the finest honey there is.

Mr. Herrod, in one of his "Helpful Hints," and very helpful they are, gave three mistakes that young bee-keepers fall into, and I feel very much as if I have been sadly guilty of the third, for I cannot claim a third of the experience that he had before he began to write on bee-subjects. But please remember I am not pretending to lay down any laws on the subject of heather-honey. It has been a labour of love to collect data from all parts of the kingdom, on facts; and I leave it to wiser and more experienced bee-keepers to deduce theories from them. Before some of these problems are solved, I think, we shall have to call in the assistance of both botanists and geologists, but in the meantime I trust that bee-keepers may find them interesting.

If I may very briefly summarise, the only points that appear at all clear in my own mind are: That heather and heaths should not be mixed up; that blends should be acknowledged as such; that to account for the many variations in colour, flavour, and density, we must study subsoil, drainage, altitudes, the lie of the land *re* sunshine and exposure, also the plant itself; but to get the best ling-honey, we must look to a pure source of supply more than anything. That is, one in which the bees cannot get at any other source of nectar. This would account for the many claims for a high altitude. It will probably be found, I think, that where and when, what those of us who know and love it call "the genuine article," is obtained, other sources of supply will be found absent, and the result is, the amber jelly that does not run, with the aromatic taste and aroma of the ling from which our little friends draw the nectar, the true heather-honey.

I beg to acknowledge the valuable assistance I have received from many personal friends, and from heathermen generally from all parts, and now tender them my very best thanks.

The Chairman said they had had an excellent paper by Captain Sitwell, for which they were indebted to him, and called upon any of those present to give their experience on the subject.

Mr. Crawshaw said he felt that Captain Sitwell had covered the field, but he had several observations to make. Regarding the characteristics of heather honey produced at the different moors, he felt that possibly by investigation of the tabulation of the results in a complete manner it might be possible to arrive at some conclusion. He thought if the information was really obtained the differences would be found not to depend entirely upon the subsoil: we might find the weather to vary the result. Usually, in his district, the *Eriea cinerea* flow runs fairly close to the beginning of the *Calluna vulgaris* flow, and the weather conditions may make them overlap. The colour and consistency are certainly affected when they do overlap: the colour is dark and the consistency thinner. To get the bees to take to supers he sent sections to the moors from which he had just extracted clover honey. He found it a mistake to send foundation in the sections. Referring to the granulation of heather honey, he said it does occur in what appeared to be heather honey, as he found that uncapped cells in which the honey was exposed granulated very much more readily than when protected. The granulation was coarse, quite unlike that of clover honey. In heather honey, from a millstone grit subsoil, he found quite 50 per cent. rejected by the bees when feeding on account of granulation. As to the suitability of heather honey as a winter food for bees, he thought it just possible that they may become "acclimatised" to the conditions. He supported the suggestion that ling honey should be classed separately, as there is no comparison between the two kinds. He accused Southern judges of knowing very little about the subject, and suggested inviting them to the moors to see for themselves. During his experience he had found honey-dew often put up as heather honey, and wondered if it was supplied by some inexperienced person. When on a visit to Mr. Quayle, in the Isle of Man, he found that gentleman taking shallow combs of heather honey, putting them into the extractor, and slinging the honey out like water, and that same honey was in a short time hard and granulated.

Mr. Pugh said there was a good deal of misconception as to what constituted "heather blend." Some seemed to think it should be principally clover with a dash of heather, while others held it should be heather with a dash of clover. He had won many medals with bell heather honey mixed with clover, but he found that clover honey with a dash of heather was most suited to the public taste. The bell heather honey came from the combs, as did Mr. Quayle's, but with the true heather honey it was quite impossible to remove it with the extractor. What was considered to be the correct thing on the show bench? Were the prizes to be awarded to the pure heather honey or to the sample that suited the judges' taste

best? In Derbyshire they were wintering entirely on heather honey, and the bees were doing well.

(To be continued.)

FURTHER NOTES ON HOW THE CORBICULA IS LOADED WITH POLLEN.

By F. W. L. Sladen, F.E.S.

The theory that the pollen is loaded on the corbicula by being scraped from the opposite leg into a receiver situated between the tibia and metatarsus and forced up on to the corbicula by the auricle, put forward in my paper published in the British Bee Journal of December 14th, 1911, has so far rested on three facts, none of them quite conclusive in itself, but all together forming strong evidence: (1) the structure of the parts concerned; (2) the experiment with a dead queen humble-bee's leg in which the auricle was made to force pollen on to the corbicula artificially; and (3) the rubbing together, exclusively in a longitudinal direction of the hind metatarsi, observed during pollen collecting from *Eranthis hiemalis**.

I am now able to give some evidence of a different character which seems sufficient to constitute proof.

In collecting pollen, bees sometimes commence working on one species of plant and

FIGURE 1.

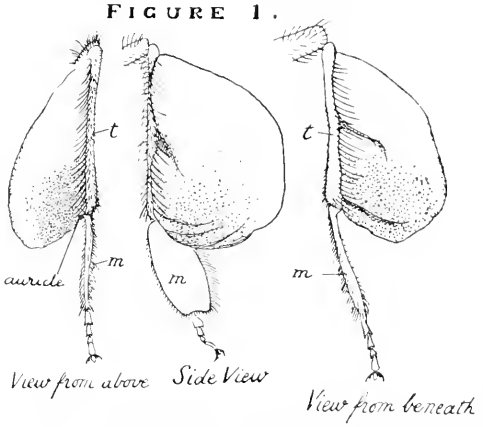


FIG. 1. Left leg of a British Golden Honey-bee loaded with two kinds of pollen.

finish on another, and if the pollens of the two species are of different colours one can clearly see each kind of pollen on the corbicula and, moreover, where the new pollen has been placed.

Fig. 1 shows three views of the loaded left leg of a bee I caught entering one of my hives that had evidently begun collecting white pollen and finished collecting orange pollen, for the metatarsal brushes bore orange pollen grains. Fig. 2 shows the loaded left leg of another bee I caught which had changed from the white-pollened plant to the orange-pollened kind at a later stage; it, too, had the metatarsal brushes covered with orange pollen grains.

An examination of the loads of these two (and other) bees showed plainly that the new pollen was pushed on to the end of the tibia that comes into contact with the auricle, for the orange-coloured pollen accumulated only here. The pollen could not have been scraped on to the corbicula by the upper edge of the tibia, as Cheshire supposed ("Bees and Bee-keeping," vol. 1, page 132), for the orange-coloured pollen extended right across the corbicula from the upper to the lower side; nor could it have been placed on the surface of the lump by the middle leg or in any other way, for the orange-coloured pollen was found where no outward application could place it.

I would like to call attention to several interesting facts: (1) The outer side of both lumps of pollen was tinged with orange, but *only on the surface;* this tinge must have been imparted by the middle metatarsi, when patting the lump here (see "B.B.J.," page 138). (2) The orange-coloured pollen is purest and in greatest quantity around the part of the corbicula on to which the auricle delivers the pollen. (3) The division between the orange and the white was sharpest in the places where the new pollen, delivered by the auricle, can find its way to the surface without much amalgamating with the old. (4) The newly contributed pollen is forced in as a wedge between the old pollen and the corbicula: this wedge causes the lump of pollen to swell and rise, and often to buckle and crease (see Illustration). (5) On its upper and lower sides the lump of pollen derives its shape from the fringe of hairs surrounding the corbicula, these hairs being straight on the upper side and curved on the under side, and they guide the swelling mass as it rises. (6) The load in the right corbicula is a perfect counterpart of the load in the left one; this shows that the pollen gathered is divided equally between each corbicula.

The bristles on the metatarsus are arranged in nine rows. In the rows at the basal end of the metatarsus the bristles are comparatively fine and close, being about $\frac{1}{30}$ th of a millimetre from one another. In the middle rows the bristles are slightly stouter and are about $\frac{1}{25}$ mm. apart. In the last row the bristles are very long and stout and are only about $\frac{1}{18}$ mm. apart.

It is interesting to note that the teeth of the comb (at the end of the tibia) that is used to scrape the pollen off the metatarsal brush into the receiver are about the same distance apart as the metatarsal bristles,

* See *Gleanings in Bee Culture*, of March 15th, 1912, page 172.

the teeth at the upper end and middle of the comb, which are very stout, being from about $\frac{1}{15}$ mm. down to about $\frac{1}{25}$ mm. apart from tip to tip, and those in the lower part of the comb, which are probably of little use, being $\frac{1}{30}$ mm. and less. I believe that the most useful part of the metatarsal brush for pollen transference is the apical half where the bristles are about $\frac{1}{25}$ mm. apart.

A suitable name for the receiver for pollen at the end of the tibia is the *excipula* (Latin, a receptacle), and, for the entrance to the corbicula, the *limen* (Latin, a threshold).

In *Bombus confusus* the fluff covering the *limen* is very long and dense, and the latter bears only one short bristle.

FIGURE 2.

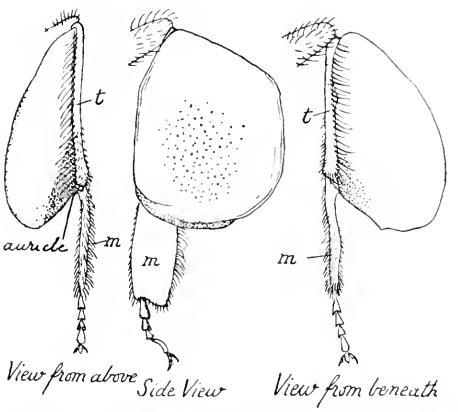


FIG. 2. Left leg of another British Golden Honey-bee loaded with two kinds of pollen.
t, tibia bearing the corbicula or pollen-basket. *m*, brush on metatarsus. The clear portions of the loads consist of white pollen, the closely dotted portions of orange pollen and the remotely dotted portions of pale orange pollen; the latter, where it is shown detached from the orange, is on the surface only.

AMONG THE BEES.

By D. M. Macdonald, Banff.

BEE-KEEPING IN BRIEF.

SPRING.

1. Until spring is well established, bees are best left severely alone.
2. Till then depend entirely on outside observation.
3. Only a momentary interior glance is permissible until balmy weather sets in.
4. This, assuring sealed stores and bees alive, leave the rest to faith.
5. The spring examination should be thorough and definite.
6. Little smoke is required at this time when manipulating.
7. The use of a veil is seldom an utter necessity.
8. Withdraw all faulty or defective combs to be replaced later.
9. Have an eagle eye for the least signs of disease of brood.
10. Congratulate yourself if no spring-feeding is required.
11. Unite all small lots which have spring-dwindled.
12. Wrap up even extra warmly when breeding has started.

SUMMER.

1. Make it your aim during May and June to get bees.
2. Don't cramp an extra prolific queen, give her ample room.
3. Have racks on three days too soon rather than one too late.
4. To insure strong stocks, do everything possible to check swarming.
5. Have surplus-chambers ready well before the flow sets in.
6. Don't spare foundation, either above or below; it pays.
7. Study your locality and know when a flow is due.
8. If too many drones show, suspect something wrong, and right it.
9. Examine any stock not carrying pollen when others are busy.
10. Provide early for the replacement of a worn-out queen.
11. Always feed a swarm in time of a dearth, also a "travelled" one.
12. It is best to hive a swarm in the cool of the evening.

AUTUMN.

1. At as early a date as possible sell out all comb-honey.
2. Don't wait until customers come to you—go to them.
3. Withdraw all surplus-chambers as soon as the flow is over.
4. Join up all weaklings, making all wintered stocks strong.
5. Remember that the best packing for bees *is bees*.
6. Don't keep up feeding or stimulating till too late a date.
7. Look well after all unsold honey, keep in warm, dry place.
8. All appliances should now be cleaned and carefully packed.
9. Spare combs might be placed in a fumigating chamber.
10. When weather permits, get all necessary painting done.
11. Tidy up all hives and surroundings to smarten the apiary.
12. Add to your stock if you can get driven bees cheap.

WINTER.

1. Assure yourself that a fertile queen heads every stock wintered.
2. In regard to stores, leave nothing to chance or mere guess.
3. Make certain no hive roof admits even a gentle percolation.
4. Give plenty warm, dry, porous packing above the frames.
5. A winter passage over frames may save a valuable stock.

6. Make all your hive entrances mice-proof early in October.

7. Avoid all jarring of hives during the season of repose.

8. During bright sunshine with snow on ground provide shade.

9. Only under compulsion should food of any kind be given.

10. The handy man can mend and make hives and appliances.

11. Read all the bee literature you can lay your hands on.

12. Plan and arrange your programme for the coming season.

TWENTY MANIPULATING MAXIMS.

1. Handle brood as seldom as possible.

2. Trust extensively to outside observation.

3. Always have a definite purpose in opening a hive.

4. Once opened, examine thoroughly.

5. Handle bees gently but firmly.

6. Keep combs as nearly perpendicular as possible.

7. Deal extra gently with newly-built comb.

8. Use as little smoke as possible.

9. Have a powerful blast as a reserve force.

10. When queen-hunting, never set bees "on the run."

11. Smoke and then jar, never jar and then smoke.

12. Test the temper of strangers before trusting them.

13. Have a veil always handy when it is required.

14. When bees turn very crusty, close up and try another day.

15. Don't keep hives open long with "robbers" about.

16. Stand at one side or behind when examining a hive.

17. Never crush a bee when withdrawing or returning frames.

18. Don't turn nervous and strike out at stray bees.

19. If stung, grin and bear it until frame is returned.

20. Never leave a hive until you have finished your job.

GENERAL OBSERVATIONS.

1. You start with one hive. The industry of the bees, their wonderful government, their marvellous prescience, the sweetness of their produce, the profit derived, all charm you—and you quickly extend.

2. You enter on the thorny path of apiculture with the most limited knowledge of bees and their ways. Extend your information by feasting on the experience of those who have trodden the path before you. In other words, read bee books.

3. You wish to know what is done in Beedom in other counties—in other countries than your own—subscribe to one or more bee newspapers, and thereby put all the world in tribute that your knowledge may grow.

4. You wish to discover how other men perform the various manipulations about a hive, and how others deal with bees. Get to know some experts, or men of wide practical experience, and learn from them as much as possible.

5. You would like to get in touch with other bee-keepers and discuss with them the thousand-and-one points which crop up in apiculture. You can do no better than join your County Association and attend its meetings.

6. Read, discuss, observe; and get information wherever it can be obtained, but do your own thinking. It is not sufficient to have a pile of facts somewhere. With all your getting, get understanding!

PRACTICAL SUGGESTIONS.

1. If one queen can lay one thousand eggs in the same time that another takes to lay one hundred, why should you be content with the poor one? Which would you prefer to head your stocks? Let that be your guide!

2. If you have a strain of bees with the temper of wasps, why endure them? Get rid of them, and let their places be taken by bees amenable to discipline. Think not of yourself alone, but also of your neighbours.

3. When you find you can insure every hive in your apiary for the small sum of one penny per hive, you should not rest another day until you share responsibilities with the Secretary of the B.B.K.A. and the Insurance Company.

4. Don't think that your duties are ended when you have taken all surplus off your hives. The season's work is not completed until you have *sold out your honey*. Many forget this self-evident truth.

5. Never leave your bee work to be carried out by another. "If you want a thing to be well done, do it yourself!" Never be content with becoming a keeper-of-bees—be a bee-keeper. Old apiarists delighted in the term "Bee Master."

6. You, while a novice, may have received help from some veteran. Don't be a dog in the manger when you have acquired experience, rather make it your aim to help any "lame dog over a style."

EFFECTS OF FRUIT-SPRAYING ON BEES.

According to the *Journal of Agriculture of Victoria*, the establishment of an apiary at the Burnley Horticultural Gardens has furnished an opportunity for observing and recording data regarding the working of bees among fruit trees and the effect of the various orchard operations upon the bees. In Australia the nectar-flow from fruit blossom seems to

be somewhat weak and insufficient in quantity for the necessities of the bees. A Victorian apiarist during the past season removed his bee colonies from his home to a district where the bees had an available range of over 1,000 fruit trees. He ultimately found that the bees were starving, and he had to remove them to a more suitable locality.

As for spraying when fruit trees are in bloom, so far there appears to be no proof that bees gather poison along with nectar and pollen, nor is there any instance on record of the poisons having proved, by analysis, to be present in dead bees, bee larvæ, pollen, or honey. At the Burnley apiary the bee-hives are right under the fruit trees, and at the time of spraying with Bordeaux mixture the ground had not been ploughed, so that the spray fell not only on any fruit blossoms which were open, but also on the Cape weed, then abundantly in bloom. Neither the spraying with Bordeaux mixture nor the subsequent one, with arsenate of lead, had any effect whatever upon the bees, the colonies developing normally without check; there was not at any time dead brood in the hives. Observations will be continued in future to demonstrate whether spraying is injurious to bees at all, or, if so, under what conditions. The article mentions the fact that in an independent experiment made last season, iron sulphate, one part in 400 of sugar syrup, was quite harmless to bees, but killed all the brood.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8422] I was pleased to see Mr. Sladen's remarks on the "Bee Diseases Bill," page 113, "B.B.J." (8403). As regards the Bill, I still contend that it is futile to wipe out foul brood, and the "Isle of Wight" disease is not named yet. The only way to wipe out foul brood, in my opinion, is to destroy every diseased stock and give fair compensation to the owner. The Irish Bee Pest Act is much fairer to the bee-keeper than the draft in "B.B.J." First, there is notification; second, compensation, and the expenses to be borne by the local authority in whose domain the disease was found. I believe in every other "Act" dealing with contagious diseases that notification has to be sent to the inspector. Why should it be otherwise in our apiaries? When cases of disease break out in swine the inspector attends to the case notified. He does not go from handling the diseased pigs to the next sty or farmyard to inspect healthy swine. The same with sheep and cattle. When disease is in a certain flock or herd attention is given to the infected ones only, but with our stock we are to be at the mercy of the inspector armed with plenary power to come and go at his own will and pleasure. Why should bee-keepers be singled out among His Majesty's subjects for coercion worthy of the worst days of Castlereagh at the end of the eighteenth century? I hope bee-keepers, for their own interest, will get some of the leading men on the local authority (C.C.'s, I expect) to insure to bee-keepers the same protection that is extended to owners of other live stock, and not leave them and their bees in the hands of inspectors armed with perpetual search warrants, giving power to overhaul your goods, both live and dead stock, after he has been dealing with contagious disease. Mr. Avery does not think there is any danger of germ carrying, but I ask him if in any other contagious disease are inspectors employed to go from inspecting diseased animals to handle healthy ones? There is no analogy between doctors and bee experts; the doctors do not handle bodies rotten with disease and then call on other patients. I may tell Mr. Avery that we have it on record in past volumes of "B.B.J." of the expert who carried a lump of foul brood comb in his coat pocket wrapped up in a piece of newspaper. This was to show bee-keepers a specimen of what foul brood was. This was, I guess, *germ carrying*. And the case of a bee-keeper recorded in the last volume (I believe) of "B.B.J.," who lost his bees by "Isle of Wight" disease, and went a long railway journey and inspected his friend's two stocks, which died from the same disease. I should imagine he was another germ carrier! But we don't want recriminations; what I have always had in view has been the betterment of our industry, and no one has had a greater interest in the craft than I have had for the past thirty years, and it is in no way abated now, but everyone who has read the journals devoted to bee-keeping must know that Foul Brood Acts have not in a single case wiped out foul brood. Nottinghamshire B.K.A. holds the record of nearly a clean bill of health—only two per cent. of diseased stocks in the county, and no Foul Brood Act.—W. Woodley, Beedon, Newbury.

[Our correspondent need be under no misapprehension, as a "Diseases of Bees Act" in this country will be quite as fair as the Irish Act. The bye-laws will pro-

vide for notification (Clause V.), which will have to be sent to the inspector just as in other cases of infectious diseases. The Board of Agriculture will see that duly qualified persons only are appointed, and we do not understand what makes our correspondent suppose that they will be allowed to go from a diseased apiary to a healthy one indiscriminately, or that a different course will be adopted in dealing with bee-keepers from that which is applied to farmers or horticulturists. We have reason to know that the Act will provide for compensation in certain cases. We can safely trust the B.B.K.A. and the Board of Agriculture to safeguard the interests of bee-keepers and provide against germ carrying, the object being to prevent disease, and not to spread it. As we have had experience of how the inspectors of the Board of Agriculture perform their duties, we have no fear of the work not being carried out in a satisfactory manner without unnecessary friction, and believe our correspondent's apprehensions are groundless.—EDS.]

HEATHER HONEY AS A WINTER FOOD.

[8423] In your issue of March 14th (page 106), "T. D. N." charges me with being a biased critic. My letter was not in the nature of a criticism at all, but was written to elicit information, and I neither questioned nor condemned his findings. All I did was to give the result of twenty-five years' experience of the use of heather-honey as a winter food, and then to put the question which still remains unanswered: "Can 'T. D. N.' explain the reason of the opposite effects of heather honey in Lanark and in North-West Durham?" With regard to his charges against me of putting my own interpretation on his letter and then giving it as his statement, I need only refer readers to "T. D. N.'s" letter (page 47) and my reply to it (page 84), and leave it to them to judge whether my interpretation is right or wrong. He jumps right away from the text (page 106) by giving us a number of American opinions on the superiority of sugar syrup as a winter food. The question having been thus introduced, I may be permitted to give my opinion, which is "that the staple food of bees should be derived from natural sources, and that we should only have recourse to artificial food in cases of emergency."

To prove his case that heather-honey is unsuitable as a winter food, "T. D. N." gives us the result of his experience for the past winter. But why confine himself to an isolated winter? If a period of ten, fifteen, or twenty years had been covered his proof would have been much more convincing. To take him on his own ground: He informs us that in his apiary, where every ounce of heather honey has practically been withdrawn, 95 per cent. of his stocks have wintered. Against this I have to put the result of my experience for this winter, namely, that in my apiary, where the winter food has consisted *exclusively* of heather-honey, 100 per cent. of my stocks have wintered.

When I originated this correspondence I confess I felt some misgivings on the subject owing to the statement of so great an authority as Mr. Simmins calling in questioning the suitability of heather honey as a winter food. The letters, however, that have appeared from week to week on this question have removed all my misgivings and quite satisfied me that heather honey is a safe, if not the very best, winter food. I note that the experience of various writers who have used heather honey as a winter food has brought a doubter like Mr. Crawshaw (page 117) under conviction, and enforced him to modify his opinion. I would here like to thank the latter gentleman for his valuable contributions—"Cappings of Comb"—which I always read with pleasure and profit.—W. PEARS, Blanchland.

"ISLE OF WIGHT" DISEASE.

[8424] It might be of interest to "B.B.J." readers to know that I have for two seasons been using a preparation for stopping "Isle of Wight" disease in my apiary, made by Mr. Ayles, of Broughton. Since using it I have increased my stocks, which were badly infected last spring, from twenty-three to forty in the autumn. I lost fifteen stocks last spring with disease. At present I have thirty-six all in a healthy condition. The four stocks I have lost this winter were two in straw skeps and two box-hives which were not treated with the remedy. I am satisfied that had I not used this remedy I should have lost all my bees as the other big bee-keepers have done down in this parish where it has not been used. If any of your readers wish to inspect my bees I will willingly allow them to do so. I might say I have been a reader of your valuable little journal this six years.—O. C. INGRAM, Stockbridge, Hants.

EXPERTS AND DISEASE.

[8425] I fully agree with every word written by Mr. G. W. Avery in your issue of March 28th (page 127). It really is scandalous that anyone should accuse experts of distributing disease without giving any proof to support his accusation. If Mr. Woodley does know of any experts guilty of such gross negligence and care-

lessness, let him give their names, so that the Council of the B.B.K.A. can cancel their certificates. If, on the other hand, he is writing without such proof he should withdraw his accusation. Such a statement one is prepared to get from the individual found in every county who knows *everything* there is to be known about bee-keeping, and therefore does not require to join any association; but coming from a man of Mr. Woodley's standing in the bee-world, it is not to be passed over lightly. What must a novice think who reads such a statement in the premier bee-paper of the world? Why, naturally, the last thing he would do is to join his county association, which sends its experts to visit members. I hope to see this question cleared up, so that the work being done by county associations may not be hindered by such calumny.—E. W. Franklin, Hon. Sec., Cheshire B.K.A.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

March Winds (p. 93).—These seem to have become misplaced in the calendar this year, possibly as a result of Lloyd-Gregorian interference, or as awaiting the upshot of the Daylight Saving Bill! Now, however, the heavens appear to have held their breath as long as they could do so, and the Arietic lambs must hope that the winds will be tempered before shearing-time. As for the bees, they have been blown off their feet upon their own door-step this week, and the wreckage of blossoms is terrible. Not only has the fruit bloom suffered, but the unopened flowers of the sycamore are strewn about the trees, and the sycamore is a most important source of supply in the breeding season.

Local Secretaries (p. 96).—It is doubtful whether an association can at once obtain the position of an old-established society, and that is clearly what Mr. Pinkney desires in his enthusiasm. Local hon. secretaries must be created, and they must be as enthusiastic as the central man. As for him, he must have unlimited time and energy and enthusiasm, and perhaps also a motor-bicycle, able to climb the stoutest of hills. For, after all, everything depends upon him, and he is often called upon to make good bricks with a minimum of straw, and may we say at a minimum wage! Mr. Pinkney has clearly started his brickyard, and it behoves those concerned to help his stoking.

Waxed Quilts (p. 97).—I have not tried the method suggested, viz., to rub with a warm lump of wax, but various other methods have quite failed to give a thin or regular coating. I found the wax most difficult stuff to handle, and results were uneven and unsatisfactory. I gave up the attempt to accomplish this, although I think it might be possible by the reduction of the wax with a suitable oil, or even by the use of a warm flat-iron, after coating roughly with pure wax.

Beneficent Moisture (p. 97).—If this be really necessary to the cure of certain diseases I foresee all our hives fitted with bronchial kettles. Truly, our bees live in a wonderful age, and the simple life seems no longer possible for them. The results of experiments with electricity upon chickens and plants would almost seem to warrant an installation having terminal plates on either side the brood-nest! Winter examination would then be facilitated by the use of tiny glow lamps under the glass quilts.

Immunity from Disease (p. 105).—It is, I think, a healthy sign when bee-keepers realise weakling stocks are not worth preservation. There is, I venture to suggest, a great deal of humanitarian nonsense talked in the bee-world. Poor little colonies are encouraged and helped at the expense of stronger and fitter stocks. This way ruin lies. Re-queen, if you will, from better strains, but do get rid of the idea that it pays to cosset and encourage unsatisfactory bees. Not only is the time largely wasted, but an injury is done to sounder lines of descent, which tells in subsequent years. I cannot too often emphasise my belief that the average honey take is the true criterion of value, and amateur queen-breeders will do well to consider results, and not simply to accept any kind of queen, whether beautiful or cheap. Have a sound system, and stick to it. "D. M. M." fairly hits the mark on page 123.

Queries and Replies.

[8305] *Removing Bees from Roof—Pollen Gathering.*—Can you advise me in the following matter: (1) Under the tiled roof of a church near here are a quantity of bees which have been there for some years. We know their "front door," but that is all, and we are anxious to try and take the bees and hive them in the rector's garden, which adjoins the churchyard. Is this possible? Your opinion and advice will be greatly appreciated. (2) Also will you kindly tell me if the bees are seen carrying pollen into every hive that it is a sure sign the queens have commenced laying in all the hives? (3) I insured my hives last May. Does the insurance hold good for twelve months?—F. M. H., Essex.

Reply.—(1) Your only way to secure the bees is to subdue them, then remove the tiles, cut out the combs, and tie those portions containing brood into frames. Place these in a frame hive, which should be allowed to stand over the opening made for a day or two to collect all the bees, then

remove the hive and its contents to the garden at night. (2) Pollen being carried into the hive does not always mean that the queen is laying, though it is a good sign. (3) Your insurance expired on March 25th of this year.

[8306] *Transferring Bees. — Decoy Hives.*—As a beginner in bee-keeping, I should like to be enlightened on the following in the "B.B.J.," which I find is a great help to me:—(1) Which is the best method in the following case: Some bees are located in a stable quite close to where I live, and I have permission to take them, and the honey if I care to. Do you think it would answer if I made a hole and in front of this placed two brackets to support a floor-board, on which a skep would be placed? Would the bees take possession of the skep? (2) A short distance from my apiary there are two empty bee hives, and very probably in May my swarms will settle in them. Are the owners within their rights in allowing these decoy hives to remain there? (3) Having purchased a skep and a box of bees, would it be advisable to transfer them into frame-hives? If so, when is the best times to do this? Thanking you in anticipation.—C. H. T., N. Devon.

Reply.—(1) No. Your only method is to remove the combs and tie them into frames. You might then put the frame-hive on brackets as you suggest, and work the stock there until the winter, when it can be placed on a proper stand. If, however, you can first take the bees two miles away, they can be put on their proper stand as soon as they have settled in their new home. (2) They cannot be made to remove the decoy hives, but if you are present when a swarm comes off from your hives you can follow and claim it or its value. (3) Yes. You can commence transferring in the latter end of April.

[8307] *Swarm Catchers.* — Will you please answer the following in your paper: (1) Is the use of a swarm-catcher an unqualified success, and is its use to be recommended to an amateur? (2) In constructing one, is it absolutely necessary to have bee-escapes in the floor-board to prevent the queen from returning to the old hive? —Domini, Kettering.

Reply.—(1) We are afraid you have never seen a swarm-catcher or you would not ask about bee-escapes in the floor-board. The queen can pass as readily through a bee-escape as a worker. It would take too much space to describe the swarm-catcher, therefore we must refer you to pages 22 and 23 "British Bee-keepers' Guide Book," where the simplest one possible, *i.e.*, "The Brice," is illustrated. (2) They should only be used under exceptional circumstances, such as in the case of an out apiary, or where the bee-keeper is away from home in the day time. Avoid using them if possible, because they hinder the work of the bees to a certain extent.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13 July.**

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Notices to Correspondents.

R. H. (Fife).—*Using Old Store-combs.*—Yes, you can use the combs of honey as food for the other bees.

W. G. A. (Elgin).—*Syrup or Honey.*—The sample is rather a bad one for the purpose of telling the source, as it contains wax, pollen, &c., mashed together, but as far as we can judge, it is clover honey.

Suspected Disease.

J. R. W. (Baldock).—The comb contains nothing worse than pollen; there is no trace of disease.

Constant Reader (Bridgwater).—(1) See reply to "J.R.W." (2) If the right quantity of naphthaline is placed in the hive it will neither taint the honey nor irritate the bees.

J. B. (Ashton-on-Mersey).—The bees were too decomposed for us to form any idea as to cause of death.

S. B. A. (Bedford).—We are sorry to say the bees show every sign of "Isle of Wight" disease.

Anxious (Hants).—There are distinct signs of the disease in the bees sent.

A. Bruce.—We can see nothing wrong with the bees sent; they appear to be old ones which have died off. You need not be afraid of asking too many questions; our endeavour is to help bee-keepers, and we can do this in a great measure by answering their questions when in a difficulty.

H. D. P. (Herts.).—The bees have died from "Isle of Wight" disease. We should prefer to burn the honey rather than use it.

Editorial, Notices, &c.

DISEASES OF BEES LEGISLATION.

This country has been a long way behind others in obtaining legislation for the protection of bee-keepers, or Government assistance in furthering the industry. Most other countries already have laws dealing with diseases, and although foul brood and other maladies are not extinct and may not be for some time to come, the benefits of legislation have been considerable, and bee-keeping is prospering where formerly it was a very precarious undertaking. Since 1894 the question has been frequently brought before the Board of Agriculture by the B.B.K.A., and the different Presidents have in turn been interested in it, but the spread of "Isle of Wight" disease has been so rapid that at last the Government have admitted the justice of the claim put forward by bee-keepers for protection, and have decided to introduce a Bill dealing with diseases of bees. Much work in connection with getting the views of bee-keepers and drafting the Bill has been done by the Special Committee appointed by the B.B.K.A., but there is still much more to do before the Bill becomes law, and it now remains for the County Associations to take their turn and give their assistance. This they can do by interesting the M.P.'s in their counties and asking them to be present in the House, to promise to support the Bill, and influence others to do the same. Every secretary should write on behalf of his association and obtain such a promise. Members, and bee-keepers who are not members of any association can also be of service, as each one should induce the M.P. for his division to make a similar promise. It is only by such united effort that there would be any likelihood of the Bill becoming law. The B.B.K.A. has done its part and will still take an active interest in the matter, but if the County Associations and individual bee-keepers are really in earnest and anxious to obtain legislation they must also do their part, which is clearly out of the province of the parent Association.

BRITISH BEE-KEEPERS' ASSOCIATION.

THE CONVERSAZIONE.

(*Continued from page* 144.)

Mr. Reid said in Surrey large areas of land were suitable for the growth of heather. He found it would not grow at all on a calcareous soil, and he had never found it on limestone. With regard to heather grown in the south, when he first started judging many years ago, he confessed he did not know what he thought sufficient about heather-honey, so he asked advice, and the reply was given him, "If you taste any honey that you would not eat yourself, that is the true heather-honey." True heather-honey had such a rough taste that he personally would prefer the blend. He did not know if he had ever tasted a sample of pure bell-heather honey, and would like to get a sample from a place where no other flowers were blooming at the same time. In Surrey some years ago, there were complaints from exhibitors that they could not produce pure heather-honey, as the bees gathered from other sources at the same time, consequently heather blend classes were instituted. If we were to introduce, as Captain Sitwell suggested, a class for the bell-heather honey, he thought the judge would say that all the exhibits were mixed honeys, and there would be no awards. Formerly, everything that had the slightest taste of heather was sold as true heather-honey. Regarding granulation, one is apt to look upon it from the sugar standpoint, but there is another side. In all honeys there are colloid bodies. If you mix with a crystallisable solution a small proportion of a colloid this will prevent crystallisation. The proportion of water to the sugars has a very important influence in the granulation. Heather-honey as we know it is so thickened by colloids that the percentage of sugar to water may be very much smaller than in ordinary cases.

Mr. Pugh considered the taste for pure heather-honey was an acquired one.

Mr. Crawshaw said Mr. Pugh referred to this as an acquired taste. There is no doubt that a heather man will hear of nothing else. As to the difference of opinion between certain bee-keepers respecting different moors he thinks it is easily accounted for by the rainfall. The high moors are drier on the eastern side than on the western side, which will account for the difference.

Mr. Cowan said he admired very much the painstaking way in which Captain Sitwell collected his information: it was only information of that sort that was of any use in coming to a decision as to the qualities of heather. The taste for heather-honey was undoubtedly an acquired one, and he had not inherited it, although a Scotsman. He preferred the milder southern honies to the heather-honey, and there are a great many others who hold the same view. No one on the Continent would think of eating heather-honey, and there they used it for making ginger-bread. There are large bee-keepers who produce heather honey in Germany—the Luneburg Heath bee-keepers. Their bees have to winter on this honey, and they manage to live through the winters successfully. The forest bee-keepers in Sussex considered the mixture of heather-

honey was not good for wintering and that it caused dysentery. Regarding the chemical ingredients of honey, iron was a very important one, and when present it quite changed the aspect of any honey, and probably had its influence on heather-honey. The subsoil also made a great difference, and he had no doubt that the sun played a very important part. The power of the sun on mackerel is known to influence their growth, and, no doubt it would have an effect on the growth of flowers and the production of nectar. Hygrometric conditions also had their influence as well as altitude and aspect. In the class for heather-honey, he very often used to find exhibits of heather blend, but there were now two classes. Heather blend should be a clover honey, with a dash of heather, not heather with a dash of clover. Scotch heather-honey (*Calluna vulgaris*) is longer before it granulates. He had some for several years before it granulated. Stiff honey may be made liquid by beating, and in Germany heather-honey is now being extracted by piercing the cells of the honey with thick needles, so that it can be extracted in the ordinary way. It was new to him to learn that heather would flourish on a lime soil.

Mr. Till questioned if it was true that you could make heather grow where there was lime. He had transported heather from Hayes Common to Eynsford but could not get it to grow.

Captain Sitwell, in replying, said he was only putting facts before them. Limestone is stated to be the subsoil of the moors in Ayrshire. They say limestone subsoil will produce greater quantities of honey than sandstone, but not of such good quality. He never got bell-heather honey, as he took care not to send to the moors until this was over. Wild thyme is a common plant on the Cheviots, and a favourite among the bee-keepers, but the taste for this honey is acquired. The quality of nectar is a question that should be studied.

In the unavoidable absence of Mr. Macdonald, his paper on "Forty Years of Apicultural Progress" was then read by Mr. Frankenstein as follows :—

Mr. Chairman, Ladies and Gentlemen,—In dealing with the subject I have chosen I am oppressed with an embarrassment of riches. A whole volume would be required to treat it adequately, and in a short paper I can but submit hieroglyphic glances here and there in various corners of the wide field.

I have selected the period embraced by the early seventies and the present, because the earlier years mark the time when there was seen the first dim dawn of the brighter regime we now experience —for from '70 on, has to be dated the origin and development of almost everything that goes to constitute modern apiculture, in its semi-perfect present condition. The men who lived in these earlier times laid the foundation well and solidly, later generations built the structure, and we, their descendants, are now reaping the fruits of their arduous labours. *Sic vos non vobis* might have been their motto as well as that of the bees, as they toiled not for themselves alone, but for us. Evolution works slowly but surely, yet it does work, and out of the germ of forty years ago the full fruit of to-day has been evolved. Progress is the law of life, and in the term of years I have named, it has been marked and consistent in every branch of apiculture.

How very many new appliances have been invented and brought to at least comparative perfection in this period of bee-keeping history! An advance has been made all along the line. Hives, supers, frames, foundation, sections, smokers, extractors, wax-rendering articles, veils, queen cages, queen-rearing outfits, and a host of other devices and appliances are all a new creation: while in bee literature the rise of bee books and bee newspapers has been most marked. Then, consider the very wonderful improvements in the means of transit and the facilities offered now for the carriage of goods, bees, and honey, and the hive and appliance trade is a new industry—one of no little importance. "The good old times of forty years ago" are very fine in idyllic imagery, or, as material for poetic fiction, woven to imitate truth, but in actual reality these times were in the main dark and sombre compared with the present.

It is true that before the year '70 Langstroth in America, and Woodbury in England, had invented the modern frame-hive, but, indeed, until the advent of the British Bee Journal these devices were but a name. They had not become a living force, because very few had adopted them to any extent, and even most of these introduced them into their apiaries only experimentally. Indeed, the straw skep was still the prime favourite with the vast majority of British bee-keepers, even of an advanced type.

The honey-slinger, as it was then euphoniously designated, had been invented some years previously, but the art of extracting was unknown in this country—liquid honey being only found in the "run" or "dropped" form. Sections, or our modern screw-capped jars with their luscious contents, were unknown. Bell glasses, or a compound of wood and glass, were the favourite receptacles for securing honey in supers. Some used "caps" wherein to store "right virgin honey," and others were content with a straw hive above the one containing

brood. Systems of queen-raising were hardly being dreamt of. Queen-cages worth the name were never seen. Queen-excluders were things of the future. Observatory hives were crude, clumsy, and generally defective. Such a thing as interchangeability of combs, or contraction and expansion of hive interiors, had not yet taken definite shape. Smokers, as we understand the implement, were yet to be. Veils were little more than the "hood of boultering," recommended by Butler two centuries earlier. We had no metal or other frame spacers, no dividers securing a perfect finish of surplus honey. Transporting bees, bee-hives, or the produce of bees, was a difficult and hazardous undertaking. The art of driving bees was as yet in its infancy, uniting was imperfectly understood. The cruel holocaust of the sulphur pit was most religiously carried out, as certain as each autumn came round. "Humanity to the honey bees," albeit it was long before preached, was still in the main but a pious opinion.

These forty years marked the rise and progress of the modern frame-hive, and we have but to look upon an early specimen of the famous Woodbury—with its badly-spaced frames; its notched frame-rests; its want of proper spaces; its awkward crown-board, and its many other glaring defects—alongside the most recent specimen of a W.B.C. hive as turned out by Messrs. Abbott; and seeing them standing side by side should be an object lesson inspiring enough to make us lift up our hearts in praise and thankfulness that our lot has been cast in a time so favourable for the pleasant and successful prosecution of our calling.

Greatly as all British bee-keepers appreciate the enormous benefit derived from the invention of Mr. Woodbury, and grateful although we should be for the moveable frame, yet there had to follow a still further improvement before apiculture could be prosecuted on a sound basis. *The Battle of the Standard Frame* broke out about 1875. From Woodbury's time onwards, almost every man who made a frame-hive made it, and the internal fittings, to suit his own ideas or his own convenience, with the result that frames, not only in neighbouring apiaries, but even in the same apiary entirely lacked the first necessity — interchangeability. Not only was this felt in hives, but when the frames were withdrawn to be extracted they often proved a curse, and not a blessing. In order that method should be brought out of chaos, it became almost imperative that all frames should be of one set size. What a host of frames of all shapes and sizes were on the market, most of them differing only by small fractions of an inch, and of course every man thought his own frame was *the best*! The original Woodbury frame measured 13¾in. by 7 $\frac{15}{16}$in., and one of the prize hives of Mr. Abbott was 14in. by 8¾in. Mr. Cowan's favourite then was 13¾in. by 8⅛in. Quoting more sizes would prove wearisome at the present time, but there was no lack of interest in the fray up to the early eighties, when at last something like unanimity was attained in favour of our present "Standard Frame," 14in. by 8½in. This was one of the copestones of the fabric.

One more step in advance was necessary, and this was secured by the invention of machines for producing foundation. Mr. Raitt of Blairgowrie, imported his first machine in 1877, but even two years later he and Messrs. Neighbour possessed the only embossing machines in Britain. What a boon this invention proved! What would our modern bee-keepers think of prosecuting their calling without this indispensable aid towards success? Think what progress has been made in this line alone since our forefathers dipped their wooden boards to get sheets of wax. Place the old order beside Messrs. Lee's machinery and product, and thank goodness that you live in the second decade of the twentieth century!

The evolution of the Honey Extractor is no less wonderful. Hruschka invented the first Honigschleudermaschine in 1865; but in 1870 not one of these could be found in Great Britain. I think it was in 1874 that the first was imported to this country from America, at a cost, including carriage, of £8. Before that date, even Mr. Abbott, one of the leading bee-keepers of his time, informs us that he practised the following crude system of extracting liquid honey. He laid his combs on a tin dish provided with a wire-work cover. Strings were fastened at each corner, and the "device" was whirled round by hand. No wonder that he complained of lost honey. The time devoted to the slow process, and the treadmill tiresomeness of such heavy toil must have curtailed the quantity extracted by this method.

About '72 our American cousins had applied their undoubted inventive faculties to simplifying and improving Hruschka's machine, with the result that some of them extracted 5,000lb. in the season of '73. The "Slinger" brought to this country did fairly well, and some of the "slung" honey was exhibited at the second Crystal Palace Show. This gave an impetus to our own inventors, and many tried their hands at improving the original. The chief credit must be assigned to Mr. Cowan for the improvement gradually brought about. Even his first machine was constructed on what I may describe as more "sane" lines than

any hitherto in use, and he patiently improved on his first design until, after years of hard work and experiment, he ultimately produced the four-frame reversible Cowan extractor, perhaps the finest and most efficient machine now on the market, so far as the vast majority of bee-keepers are concerned.

In America, where they do everything on a most extensive scale, eight-frame machines on this model are quite common. Some of these are driven by manual labour, but most are now being fitted to oil engines or electric motors. The latest I have read of is that belonging to Mr. Holterman, Canada. It is, I should think, the largest extractor in the world, being a twelve-frame automatic machine, run by a gasoline engine; and in connection with the extractor is a centrifugal honey-pump that does the work of lifting the honey direct to an overhead ripening tank, from which it is directly bottled; the filling also going on automatically.

The knife used when uncapping, means comfort as well as speed—or the want of both—and very great improvements have taken place in these useful tools. The Bingham and W.B.C. knives seem to keep the field, but of late the steam-heated knife makes the work of uncapping more of a pleasant pastime. Numerous styles of uncapping machines have been placed on the market, all claiming to do the work expeditiously and successfully, but I fear a full measure of success has yet to be attained. Capping-reducers and various other inventions to aid quick and easy work all go to show that vast strides towards progress in this line have recently been made.

Few features of bee-keeping show so wonderful an advance as this branch of liquid honey; and few, if any, have helped more to make bee-keeping successful and profitable. In this line I have time to do no more than name shallow-frames, metal ends, hanging frames, brood foundation, bee escapes, screw-cap honey jars, spring packing-boxes, corrugated paper, honey-cans, honey-ripeners, excluder zinc, improved gearing, knife-warmers, improved queens, super clearers, wire excluders, reversible extractors, as points which all aid in enabling more honey to be reaped, and that of the finest and purest. The liquid honey staged at our shows nowadays is fit for the table of any lord or prince in the land.

Side by side with this exquisite sweet, section-honey, as produced at the present time, is all that the heart of man or woman could desire. Indeed, the comb-honey of to-day is as far ahead of the product of our forefathers—pleasant as it often was—as the purest extracted now is of the "dropped" honey turned out in the early seventies. Time will not admit of more being said—but as "good wine needs no bush," neither do these admirable products require praise—they speak for themselves.

Bee literature is always an interesting subject, and deserves a word in my brief review. It dates from 1600, as far as English bee books are concerned. Hill "brak the ice," and at least Butler, Purchase, and Thorley deserve naming, as their works are, and will remain, classics. Bevan, Huish, and Keys, if on a little lower plane, are honoured names. Then we come to a period of dearth, unless for some Continental translations. In '70, modern bee literature was in its infancy—"a mere child in the go-cart." Such compilations as those of Neighbour, Rusbridge, and Hunter had to suffice for years after, although they served out but poor pabulum. Two American bee-books of this period may be named—both wonderful works—Quinby's "Mysteries of Bee-keeping," and "Langstroth on the Honey Bee." Yet the first edition of Langstroth and the twentieth century edition are two different works. Edition after edition has shred page after page of original matter, until now we have another book. If one possessed all of these editions he would have, in brief, an historic record of the marvellous evolution undergone in everything apicultural during this comparatively brief period.

Although embracing only thirty of these years, I have an admirable illustration of the wonderful apicultural progress experienced since 1881, when the first edition of that standard work, Mr. T. W. Cowan's "British Bee-keepers' Guide," was issued. It shows in a nutshell how we have gradually advanced from precedent to precedent. I have a copy of the first edition lying open in front of me as I write, and alongside it reposes the twentieth edition, issued in Coronation year. No better illustration of the immense strides made in bee-keeping as a whole could be submitted. The first edition contains only 135 pages, the last numbers 226; but as more lines have been added to each page, the actual printed matter is doubled. None of the advertisers of 1881 now live, or, at least, they have dropped out of the race, and not even their names are familiar to the present generation of bee-keepers. *Not one* of the illustrations and sketches, numbering sixty-five, used in the first, appears the same in the twentieth century issue. How obsolete most of them are, already, may be gathered from the fact that among them were "Distance Racks," "Wire Foundation Fixers," "The Little Wonder Extractor," "Cheshire's Hive," "The Alexandra Hive," and "Section Frames for Brood-Nest." Five different sized frames are illustrated, but amongst them

our "Standard" does *not* appear. Its time was not yet!

Disease is summarily dealt with in the early book in six pages, whereas twenty are devoted to the subject in the later work. Comb foundation is credited with six pages against twelve, and so on, with almost every other subject. While of course a few essential unvarying features remain the same in type, yet it may be confidently asserted that such a transformation has taken place in the intervening years that the latest issue, compared with the earliest, is in reality a new book—one which should be in the hands of every bee-keeper. One feature worth emphasising is the wonderful improvement in the illustrations. While they number 163 as against sixty-five, that is the point least deserving commendation, for the newer ones as far excel the earlier in quality and excellence as they do in mere number.

Other books have lived—and died. Of these a few, a very few, passed into a second or third edition, but all that can be said of them further is that they had their day, and ceased to be. One or two may be on the open market, but the others, if sought, must be looked for in some second-hand book shop. Personally, I feel that there is room for more good books dealing with British bee-keeping—and in recent years we make but a poor show in this respect. Look at America! The works of Messrs. Root, Miller, Langstroth, Cook, Doolittle, Lyon, Comstock, Townsend, Pratt, Dadant, Alexander, Hutchinson, and several others all find a ready sale.

(*To be continued.*)

REVIEWS.

Bee-keeping by Twentieth Century Methods, by J. E. Hand (The A. I. Root Co., Medina, Ohio, U.S.A., price 50 cents —2s. 1d.).—This book of fifty-nine pages is principally intended to describe Mr. Hand's methods of controlling swarms by means of a patented floor-board of his own invention. The author says that the aim of the book is to lift bee-keepers out of the old ruts and place their feet on smooth ground by introducing principles that eliminate all unnecessary manipulation with bees. The Hand system has given good results in his apiary, and the method is fully described and illustrated. Hives of ordinary construction can be used with the special floor-board, and one of the illustrations shows a column of hives seven stories high, piled on each other with three stories standing by the side, which give ample room for the overflow population, and thus prevent swarming. The book contains a great deal of other valuable information with regard to requeening; treatment of foul brood; wintering; out apiaries; migratory bee-keeping; feeding; grading honey, &c. It is also well illustrated.

Southern Bee Culture, by J. J. Wilder (*American Bee Journal*, 117, North Jefferson Street, Chicago, U.S.A., price 50 cents —2s. 1d.).—This is a hand-book of Southern bee-keeping by perhaps the most extensive bee-keeper and honey-producer in the State of Georgia. The methods are so simply described that they would be easy to carry out. Mr. Wilder has five apiaries of his own, as many as he can give proper attention to, and has furnished stock from which many apiaries in the South have been established. He produces many tons of honey every year, and tells in this book of 143 pages just how he does it. The book is profusely illustrated, and gives a great deal of information respecting the Southern flora.

The Honey-Money Stories, by Paul Point, Orvice Sisson, Albion Girard and Charles C. Miller (G. W. York and Co., Chicago, U.S.A., price 25 cents.—1s.).—The authors tell us to "use this book as the bees use the flowers," and in the short articles show how honey improves health and that better health increases wealth. There are some good sayings, for instance: "Flowers are benefited by the bees as they gather honey for the good of man. Some money-makers benefit all humanity while making their money." Dr. Miller says: "The real food value of honey in milk or on bread and crackers is worth knowing. If you are not aware of it, make some tests. If you eat too much you may injure your appetite for a wonderfully useful food. You can secure or regain an appetite for honey by using a very little of it daily." The little book is beautifully illustrated, and contains a number of short articles intended to popularise honey.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

Disinfection.—A simple word which the dictionary defines as "a purifying from infecting matter"; not only the novice, but also the old hand, rarely construe the right meaning to this operation. With bee-keepers it should not only mean an operation to be carried out in cases of disease, but in every hive in the apiary during the first days of spring. To get the most out of bees it is necessary that they should live under ideal hygienic conditions, and in an artificial home this can only be accomplished by the aid of the bee-keeper. For a moment or two we will leave out of the question hives or appliances that have been occupied by bees which have become diseased, and take the case of a hive where the bees have passed through the winter under normal conditions.

During a portion of the winter the weather has been so severe that there have been only a few days warm enough for the bees to take their natural cleansing flight. Natural cleansing of the body by the voiding of the fæces is all that has been possible. There has been no opportunity for house cleaning. We find upon the floor-board a quantity of small granules; these consist of the cappings which have been removed by the bees to get at the stores, and also portions of granulated honey, too hard for the bees to eat without the aid of water for softening. The moist external atmosphere has entered the entrance, attracted by this exposed granulated honey, as also is the slight moisture caused by the respiration of the bees, so the mass is damp and sticky; it is congealed sufficiently to enable us to lift the whole lot by means of the scraper without it breaking up. When this has been done, the portion of the floor-board which was covered in this way is found to be black and damp; it also gives off an offensive odour. Moreover, occasionally the mass is found to be teeming with living matter, *i.e.*, maggots of small flies and beetles. On another part of the floor-board we may find a number of dead bees, which, on account of the slight stickiness on the surface, have become so fixed that it is impossible for their fellows to remove them. That they have endeavoured to do so is shown by the bodies being entirely stripped of hair, giving them a black, shiny appearance; in many cases the wings have been bitten off. This mass, too, will give off an offensive odour during the process of decomposition. Under the above circumstances, disease is not actually present, but the conditions are such that the vitality of the bees is lowered by breathing this impure air, and if disease is in the neighbourhood such colonies are the most likely to be infected; therefore, purification must be carried out at the earliest possible moment.

The best way to carry this out is to have a spare hive. This should be well scrubbed on the inside with strong soda and hot water, and scraped free from propolis. It should then be thoroughly painted inside with either a 10 per cent. solution of formaldehyde, which is made by adding four parts of 40 per cent. commercial formaldehyde to one part of water—say two ounces formaldehyde to eight ounces water—or it can be washed with strong carbolic soap or painted with a solution of carbolic acid, one part Calvert's No. 5 carbolic acid to two parts water. There may be some difficulty in getting the carbolic acid to mix with the water. Perfect amalgamation can be secured if the acid is first mixed with a little glycerine. By the formaldehyde treatment the hive can be used as soon as it is fairly dry, but in the case of carbolic soap or acid the parts should be exposed to the sun for a few days to get rid of the smell. Therefore, as a time-saver, formaldehyde is the best.

(To be continued.)

NOTE.—See that the bees have plenty of fresh, clean water. This should be given in shallow vessels filled with stones to give the bees foothold. A pinch of salt should be put in the water. If water is not provided, hundreds of bees may be lost in obtaining it from running brooks or deep vessels such as water-butts, where they get drowned. In those districts where there is an absence of natural pollen, pea flour should be sprinkled on shavings in a box placed where the bees can get at it readily, but sheltered from the rain. Unite weak stocks upon the first fine, warm day. Feed with syrup where necessary.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of March, 1912, was £1,251. — From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

PROPOLIS AND POLLEN.

[8426] Mr. Sladen's letter on "How Propolis is Collected" (page 126), does not refute the suggestion made some time ago that propolis was obtained from the pollen; because the intelligence of the bees may have shown them that there was the very thing gratis and in quantity that they had hitherto obtained in quite another fashion. Bee-keepers have seen bees carry loads of propolis into the hives, but these lumps are smaller than the loads of pollen, more resembling tiny beads. These beads do not appear to come into contact with the surface of the corbiculæ. They appear to be just sufficiently held by the surrounding hairs. If the propolis were plastered into the corbiculæ, would it not be very difficult of removal unless the jaws are employed for that purpose? Of course, the resinous substances from trees—say, the buds of the chestnut—are extremely tenacious, and very different from the "propolis" upon an old quilt. During the hot weather last year I saw many bees carrying in these bead-like

chunks of propoli with strings of it depending down their legs. When the bee has dusted itself in pea-flour, it proceeds to rub the posterior pair of legs together vigorously, and Mr. Sladen has explained how by so doing the corbiculæ become loaded. But quite a lot of the flour falls to the ground in the process and is wasted. If this be caught it will be found to be dry and powdery, whilst that which finds its way to the corbiculæ is quite moist and adhesive. It is said that the tongue is frequently extended to supply moisture, though I do not think it is said exactly how the pollen is moistened by this means.

In observing bees through a magnifying glass, I could not see that the tongue was used for this purpose. Occasionally a bee extended that organ, but only to pass the anterior legs over it in the act of cleaning. It is usually said that the surface of the auricle is smooth. There appear to be a number of prominent teeth distributed over its surface. I cannot say if they are flexible or strongly chitinous. They appear to be slightly inclined in a definite direction. If they were horny, would they not impede the smooth passage of the stream of pollen? Can Mr. Sladen say what purpose they are likely to serve?

Is it likely they are flexible, and possibly providing a secretion moistening the pollen in its passage to the corbiculæ?

Is it not a physical impossibility for bees to load their pollen-baskets by crossing the posterior legs as stated by Cheshire?—G. M., Northants.

ODDS AND ENDS FROM NORTH ESSEX.

[8427] From time to time various writers in the "B.B.J." advocate wintering bees with the supers in position. I myself have adopted that plan with about a score of hives during the winter just past, with entire success; but I do not know if there is anything specially commendable about it, as all my stocks, however domiciled, have arrived into April healthy and hearty, for which I am thankful.

I do not share the antipathy our esteemed friend "D.M.M." manifests towards the skep as a home for bees. I know of men owning frame hives who could scarcely be excelled for carelessness and cruelty towards their little workers, not even taking the trouble to destroy the nests of mice *known* to exist on the top of the frames in winter. I myself give several calls a year to such an apiary, where the owner, who has kept bees for about ten years, is still unable and unwilling to manage them properly. Last summer I took the section racks off, to his great astonishment, with no other tools but a smoker and pocket knife. His method was to go at dusk armed with a spade, and enveloped in a fearful dress, and prise the racks off by sheer force of muscle, carry them to an outhouse, and leave them there until the bees flew home. At night, when the furious insects had quieted down, they were swiftly covered up, there to await the attention of an unsuspecting apiarist to put matters straight. After so redoubtable a writer as Mr. Crawshaw has expressed himself possessed of an open mind on the question of "tanging" absconding swarms, I am emboldened to mention a case which would seem to lend some support to such a custom. Last summer a party of men were hoeing corn in a field in this locality, when suddenly a small swarm appeared overhead, travelling at a good pace, too, high in the air. The men tanged their hoes for all they were worth, and immediately the cast dropped like a bird and settled close to the workmen. One of them put it into a box, in which it stored an immense amount of honey, and that little cast has grown into a powerful stock. I think I'll just try it next summer.—W. S. S., Braintree.

"I.O.W." BEE DISEASE.

[8428] During the past three seasons this district has been almost depleted of bees by the above disease, and as my apiary became affected, I decided to try and discover the nature or form of the malady and also to experiment with the disease to see if it were possible to control it. In examining my most affected colonies I found a fungoid growth so fine in its character that with the naked eye it was impossible to discern the dividing line between the affected and non-affected portions of the combs. On examining with a microscope, I found that the fungi in spreading was of a filamentous nature, and when developed resembled minute mushrooms leaving a fine mould as its residue full of spores closely allied in appearance to the spores of the Bacillus diphtheria.

The disease having proven itself to be zymotic in its action, I realised that the contagion had a wide field of operation, and that with the thousands of bees in each hive, and fresh bees hatching out daily to do anything to arrest the disease seemed next to impossible. To try and accomplish this I transferred the bees on to new frames and foundation, and fed them with a medicated food, but it did not in the least retard the spread of the disease, and the whole of the bees died.

Other colonies I then transferred into hives which I had specially prepared with a chemical preparation, so that it should destroy the germs which should come in contact with its fumes. Here again I had

not reckoned upon the fragile life of the bee, and I found that whilst destroying or reducing the vitality of the disease fully 75 per cent. of the brood did not mature, having been injured by the fumes, with the result that the colony was depleted in numbers and robbing bees cleared the hive.

The disease being still with me, I transferred other colonies into boxes treated with a fresh preparation, which I found effective in controlling the disease without impairing the vitality of the brood, but I found, on tasting the honey from one of the treated hives, that it was heavily tainted with the effluvium from the materials used in treating the hive. Being satisfied that the disease could be controlled, it remained for me to obtain a chemical preparation which should be co-equal in its action on the bees to what I had been using without impairing the flavour of the honey. This I was successful in doing after many efforts, and those colonies which were treated last summer and autumn are proving that the disease can be cured with a material which has no deleterious effects upon the honey.

In carrying out my experiment, I have been very much hampered by my bees robbing other apiaries in which the bees had died of the disease, and also from bees from an affected apiary near my place trying to rob my hives, thus continually bringing fresh disease to my hives. At present I am treating a stock of bees taken from an apiary where all the others had died, and although this stock was badly affected, it is free from any signs of the disease in the crawling stage, and the bees are breeding as well as any in my apiary.—W. J. Ayles, Sanitary Inspector, Broughton, Stockbridge.

[We are requested by a prominent bee-keeper in the Isle of Man to urge bee-keepers there not to import bees, &c., from the Mainland, so as to keep at bay the "Isle of Wight" disease, which, up to the present, has not been seen in the island. We are sure all interested will pay attention to this warning.—Ed.]

GLASS COVERS.

[8429] I am not a bee-keeper with eighty stocks (see page 125, 8411), but my average is about twenty, which have all had glass covers for the last five years; if I had eighty or 180 stocks, they should all have glass covers! In winter, if properly covered over, the bees crowd over the tops of frames and seem well satisfied with the convenience. The covers are very sanitary and give the bees ample chance to ventilate, there is an absence of waxmoth and propolis which makes them all the more valuable, in addition to the other good points mentioned by correspondents in the "B.B.J."—A.E.J. (Mid Cornwall, North).

THE CORBICULA.

[8430] In describing the entrance to the corbicula of the honey-bee in my article in the "B.B.J." of December 14, I omitted to mention that there is a single long hair some way within the entrance and near the upper side. I have examined several specimens and have found this hair present in all of them. No doubt its function, like that of the attachment hairs in the entrance to the corbicula of the humble-bee, is to provide a means of attachment for the pollen before the lump is large enough for the basket hairs to carry out this duty.—F. W. L. Sladen.

Queries and Replies.

[8308] *Honey from Ivy.*—With further reference to the value of honey from ivy as a human food: There is certainly a very great prejudice against it in this neighbourhood. It is well known that when labourers work at clearing ivy from old houses they constantly contract an irritating rash. My attention was called to this some years ago, when a labourer, who was tearing away ivy from a wall, said one morning to me: "I never knew such a lot of fleas." I see in Dr. Radcliffe Rocker's "Diseases of the Skin," vol. i., p. 414, that "wet ivy" is recognised as one of the plant irritants likely to produce *dermatitis venenata*. A short time ago I was with a man who was covered with an irritating rash. That may have been caused by the illness from which he was suffering, but it is rather remarkable that he had for some time been eating at his tea honey from ivy, expressing his opinion that he liked the bitter flavour. It seems to me that this is a matter which deserves a little consideration, and that it would be well to ascertain how far the poisons which reside in a plant do affect its nectar, and what possible consequences might follow the use of honey drawn from plants which are known poisons.—E. V. P., E. Dereham.

Reply—We have never heard of honey from ivy-blossoms being injurious, and as it is produced so late in the season but very little of it is likely to be stored for human consumption. Our own bees store it for winter food and we have never noticed any evil effects, as the bees have always passed through the winter in admirable condition. We have always considered it valuable, coming as it does when all other sources are over. All our supers are re-

moved some time before the ivy blossoms, so that we never get honey from it stored in them. There are many plants that affect some people, ivy being one of them, but on the other hand there are many constitutions in no way affected by them. For instance, *Primula obconica* and *Rhus toxicodendrum* act as irritant poisons on some persons, while they have no effect on others.

[8309] *Transferring—Irascible Bees.*—(1) I have a stock of bees in an old hive, the frames of which are an odd size. This week-end I have placed them on top of the body-box of a new hive containing ten frames of foundation. How long may I expect them to be in working out the foundation? I might mention that there are a large number of fruit trees in this vicinity in blossom at the present time. I have been feeding on syrup for two weeks, but think it not necessary during the present period. (2) Am I correct? My reason for asking as to the length of time taken to build out the foundation is that I want to take the old hive off, rear a queen or introduce one, and place on another new hive until the end of the season, then to take all the surplus in the old hive and do away with it. (3) Can you tell me why some bees persist in following one about? Several times during the last two or three days, whilst working in my garden near the hive (not in the bees' flight), one will come buzzing about my face especially, make several darts at me, and—well, I have to draw slowly away. It is very trying, as I have never been stung. I like your journal and always look forward to it on Thursdays.—F. W., Chelmsford.

Reply.—(1) So much depends on the weather that it is quite impossible for us to say how long it will take. (2) When the bees can work upon the fruit bloom there is no need to feed, but if several bad days prevent them flying, then you must feed. (3) There are times when an odd bee or two will follow one round as you say. They are bees with irascible tempers; kill them when they annoy you in this way, and the trouble will cease.

[8310] *Overstored Stocks.*—My stocks are honey bound, there being several combs in each hive still full to the bottom bars. They are fairly strong, and getting rather cramped for room. I have no extractor, but think the honey is now too thick to leave the combs easily. I have uncapped a good deal, but there is more than the bees want at present. What is the best procedure?—E. G. T., Harrow.

Reply.—Remove one of the full combs and replace it with a frame fitted with foundation; repeat the process if necessary. The removed comb can either be saved till autumn or it can be melted down.

[8311] *Re-queening.*—I want to find out the very easiest manner of re-queening, as I have read of so many methods (all, of course, the best) that it is hard to make up one's mind. I have about sixteen stocks usually. I suppose the best thing would be to re-queen eight every year. Would it answer to confine the old queen to a shallow super of narrow end worker-comb about the end of May, using excluder zinc, and remove her when the virgin below hatches out? Would the bees rear another queen in these circumstances? It is understood I do not want to buy queens. I have read all about nuclei forming, but this entails labour I cannot spare time for. I shall much appreciate your kind help.—J. Vernon White, Glos.

Reply.—The plan you suggest would not work satisfactorily. As you do not wish to buy queens or go to the trouble of rearing them in nuclei, (which is the best method) you should let the colony headed by your best queen reach swarming point, kill off the old queens in each stock to be re-queened, and at the end of twenty-four hours insert a sealed queen cell from the selected stock in each.

[8312] *Dealing with Suspected Disease.*—Would you kindly tell me if there is any sign of disease about the enclosed bees? They were taken off the alighting-board of one of the hives, and as fast as I clear them away, on the next warm day there are great numbers lying about dead and dying. The bees were bought as a natural swarm last May, guaranteed free from disease, and during the winter they do not seem to have settled at all. There are a few bees left in the hive yet, and the combs are full with sealed stores. My other hives are much quieter, with no dead bees about. (1) In the event of bees turning out diseased, could I recover value under the guarantee from the vendor? (2) Might it be a case of queenlessness? (3) If no disease, would it be safe to use the stores for other hives in spring in the case of their being queenless or of turning out weak? (4) Would it do to open the hive on next warm day and overhaul same, or leave it till spring? (5) If diseased, I suppose I must burn the lot?—J. H., Woolton.

Reply.—(1) We do not think so after so long a period. (2) Possibly, but we do not think so. (3) We are afraid, from outward signs, the bees are suffering from "Isle of Wight" disease; to make quite sure, send some live bees to Dr. Malden, Medical Schools, Cambridge. (4 and 5) It will be unwise to open now. If Dr. Malden reports disease burn the lot.

TRADE CATALOGUES RECEIVED.

E. H. TAYLOR (*Hive Works, Welwyn, Herts.*).—A well got up catalogue with numerous illustrations of the goods supplied; it contains eighty-two pages. It would be difficult to name any appliance used by bee-keepers that cannot be found in this list. We notice that Mr. Taylor, like ourselves, finds good ideas pirated by unscrupulous people who lack originality, and would call attention to his warning. Of his poultry appliances we can personally testify to their cheapness and utility, and here again everything is listed under the same cover, from a marking-ring to the largest poultry-house. A postcard will bring the catalogue post free.

JAMES LEE AND SON, LTD. (*Head Office and Power Works, 4, Martineau Road, Highbury, London; Showroom, 10, Silver Street, Holborn; Bee Farms, Fulbourn, Cambs.*).—Again a well-produced catalogue of forty-four pages, with goods marked at the lowest prices compatible with good workmanship. The most interesting part is the "Ayles' 'Isle of Wight' Disease Cure." We notice that Messrs. Lee are treating all new hives sent out with this remedy. The catalogue is post free and is well worth possessing.

A. H. WILKES (*Lichfield Road, Four Oaks, Birmingham*). — This firm's aluminium goods are well known: also the inventive genius of the proprietor is shown by the many ingenious patents listed in its thirty-two pages, which is an increase on last year. We would call special attention to his "New Section Glazing Machine," which will supply a long-felt want. It can be had post free.

R. STEELE AND BRODIE (*Wormit Works, Dundee*).—Here again the catalogue has been increased from sixty-three to sixty-six pages, and right well are Northern bee-keepers catered for by this firm. Requisites for the moors and dealing with heather honey of course predominate, at the same time everything for producing flower honey is listed. Northerners should not miss obtaining this post free catalogue.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13 July.**

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Notices to Correspondents.

VICTOR (Ledbury). — *Transferring from Skeps to Frame Hives.*—(1) If you wish to keep bees for profit you must certainly discard skeps. (2) The method of transferring has been so often described in our pages that you must forgive us if we refer you to the "British Bee-keeper's Guide Book" (pages 149-150) where it is fully described and illustrated, as we cannot devote space to it again at present.

Suspected Disease.

PERPLEXED (Birmingham).—The bees show every sign of "Isle of Wight" disease.

D. B. (Ormskirk).—The bees are badly constipated, and there are outward signs of "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼ *in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

5 W.B.C HIVES, complete (3 Taylor's, and 2 practically new), Extractor, with chain drive, quantity of worked Supers, spare lifts, and accessories, £3 10s.—W. J. WILLIAMS, The Bungalow, Addlestone, Surrey. u 39

BEES.—6 strong, healthy Stocks, in straw skeps, 12s. 6d. each.—C. SMITH, Valley-terrace, Leiston, Suffolk. u 37

CAN BOOK NOW, healthy May Swarms, 15s. each, carriage forward; boxes must be returned.—PHILIP JONES, Blakeney, Glos. u 36

FOR SALE, 2 dozen medium coloured well-filled Sections, 7s. 6d. dozen; also 2 dozen dark, 6s. dozen, carriage paid.—SPENCE, East Witton, Middleham. u 38

STRONG healthy Stock of English Blacks, wired frames, including case, 25s.—DIGHTON, 13, Kenwyn-road, Wimbledon, Surrey. u 35

GENUINE Cambridgeshire Honey, 56s. cwt., free on rail; sample, 2d.—SCHOOLMASTER, Bourn, Cambridge. u 34

WANTED, 2 Taylor's No. 10 W.B.C. Hives, must be equal new condition, guaranteed healthy.—"BEEHIVE," The Dale, East Dereham, Norfolk. u 33

GOOD medium Honey, ½ and ¼ cwt. tins, 6d. per lb.; sample, 2d.—O. KNIGHT, Epney, Stonehouse, Glos. u 32

GRANULATED HONEY, good quality, in 28lb. tins, 14s.; sample, 2d.—G. MILLIS, Hills-lane, Ely, Cambs. u 31

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, April 18th. Mr. W. F. Reid presided and there were also present Messrs. R. H. Attenborough, E. Watson, J. Smallwood, J. B. Lamb, T. Bevan, and Sir Ernest Spencer. Association delegates, Dr. Lloyd Jones (Suffolk), Mr. G. W. Judge (Crayford), Mr. G. R. Alder (Essex), and the Secretary, Mr. Herrod.

Mr. Reid having to leave early, correspondence with the Board of Agriculture was by consent dealt with first, and a letter drafted in reply to one received.

Mr. Lamb was then voted to the chair.

The minutes of the previous meeting held March 21st were read and confirmed.

Letters expressing regret at inability to attend were read from Messrs. T. W. Cowan, A. G. Pugh, H. Jonas, O. R. Frankenstein, C. L. M. Eales, and E. Walker.

The following new members were elected: Dr. L. Burrell, 24, Kew Gardens Road, Kew; Mr. J. Padget, Suspension Bridge, Wilney, Wisbech; Mr. J. Easton, Willowbank, Bathgate; and Mr. L. Rutherford, Sunnyside House, Tweedmouth.

An application for affiliation was received from the Cambridge Town and County Mammoth Show Society, and the same was granted.

The name of Mr. Fischer Webb was submitted as delegate by the Croydon Association and was accepted.

The report of the Finance Committee was presented by Mr. Smallwood. The balance in hand at the end of March was £152 1s. 4d.

A notice of motion in favour of the Diseases of Bees Bill was received from the Hitchin Association.

Applications for examinations for Third Class Certificates were received from the Cheviot Association for June, and from the Glamorganshire Association for July 17th and 18th; both were granted.

It was resolved that Mr. L. S. Crawshaw, Mr. R. H. Attenborough and Sir Ernest Spencer be appointed a committee to see members of Parliament in the lobby of the House of Commons, to secure their interest in getting the Diseases of Bees Bill passed.

Next meeting of Council, Thursday, May 16th.

THE CONVERSAZIONE.

(*Continued from page* 155.)

That bright day in May, 1873, which saw the first issue of the BRITISH BEE JOURNAL was a red-letter day, because it marked an epoch in the history of bee-keeping. From that day onward apiculture in these our Islands, had a pivot round which it could centre, and hence the large body of bee-keepers ceased to be a segregation of atoms. Here was a rallying point, a centre round which all that was best in apiculture from John o' Groats to Land's End might concentrate. I cannot dwell on the subject, much as I would like, but I must say that the pages of each successive volume from one to forty, the running issue, all go to testify in an unmistakable manner what vast strides have been made in progressive development during these forty years; and let me add, these pages have immensely helped the good work. At the start, under Mr. Abbot's management, it was only a monthly, published at 10s. 6d.; and for that sum subscribers received 200 pages. The latest volume contained 514 pages, the price being 6s. 6d. post free. It reaches our homes, even in the North of Scotland, on Thursday, the day of publication, and as it is a weekly visitor instead of a monthly, its power for good must be ever so much increased. It is worth noting that it is the only weekly bee publication in the world. With something fresh and interesting in every issue, devotees of apiculture inform me that they hunger for its appearance, and, if by any chance it misses in post, they feel as if something had gone wrong with the world.

In estimating the value of the various forces which have combined to bring about the semi-perfection of the present time, I would assign a very high place indeed to "OUR JOURNAL." (Loud applause.)

Several good American bee papers find their way across, and obtain a limited sale. Of these, *Gleanings*, and the *American Bee Journal*, are really good publications. The first is of about the same age as our JOURNAL, and the latter is considerably older. The *Bee-keeper's Review* and *Canadian Bee Journal* are of later growth, but of some promise, and each ably fills a niche of its own.

In the very first issue of the BRITISH BEE JOURNAL a suggestion was thrown out for the formation of a "Bee Guild," and soon the idea blossomed and ripened into the inauguration of the British Bee-keepers' Association, which from then until now has gone on with varying success, but always with strenuous effort, working for the betterment of English apiculture. I am not one of those who belittle the actions of the association, but I feel that all along they have been hampered for the want of funds, and they themselves will be the first to acknowledge that their results run short of their desires. Yet, in spite of scant funds, they

have accomplished much. The grand shows held at the Crystal Palace, Alexandra Palace, Kilburn, and Kensington in the seventies; those held so many years in connection with the Royal Agricultural, and the splendid exhibitions at the Grocers and Dairy Farmer's Society Shows, in the Agricultural Hall, &c., have all been conducted under the auspices of the Association, and all have done much to popularise bee-keeping, and have aided greatly in bringing honey under the notice of the general public. Then a little army of some 1,300 experts, first, second, and third-class, have secured the *imprimatur* of the B.B.K.A., and they are found in all corners of the kingdom, "leavening the whole lump." The fostering of local associations has been a chief aim of the parent Society, and membership of both has never been higher than at present. Government long stood aloof, but at last it has deemed the B.B.K.A. worthy of recognition. (Applause.) Great things may be expected if the Development Grant is well and wisely expended. Insurance is a boon lately conferred on us. The Association Library numbers over 500 volumes, and we are soon to have a catalogue. At present a committee is moving in favour of a Bee Diseases Bill. Would that it were an Act! The latest Annual Report is the most gratifying for many years, and tells of progress all along the line. (Applause.)

I should have liked to touch lightly on several names of men who did yeoman service in developing this our art of bee-keeping, men whose names are as familiar in our mouths as household words. But there is one who stands *facile princeps*—head and shoulders above his fellows; who was one of the prime movers in every good work at the beginning of my forty years' review—who, we are glad to say, at the end of those forty years, is still with us. Lately I have seen him designated the *doyen* of English bee-keepers, the *Nestor* of British bee-keepers, the *Grand Old Man* among the world's apiculturists. Need I mention that only to one man can these terms be truthfully applied—he who presides over your deliberations to-night, as he did all but forty years ago—Mr. Thomas William Cowan. (Loud and prolonged applause.) For length of service, and eminence of service, Mr. Cowan stands alone, as I have said, an easy first.

He was a member of the British Bee-keepers' Association from its inauguration, was early appointed a member of the managing committee, and acted as chairman almost from the start. What care, labour, and expense he has incurred in recent years in filling the chair so admirably and acceptably is well known to all who are interested in apiculture.

At the great shows held at the Crystal Palace, Alexandra Palace, Kensington, &c., nearly forty years ago, he was an ardent exhibitor and a very successful prize taker. His success embraced hives, supers, honey, extractors, bee quieteners, *everything*! Following these successes as an exhibitor, he has acted long and prominently as a judge at most of the leading shows all over the kingdom, and no man at the present time would claim to be his equal in this difficult art. As an inventor, his name stands high. The Cowan hive is an excellent one, and for the amateur carpenter it is the easiest to make and keep wind and water-tight. I have already named his smokers and extractors; and his rapid feeding device and maturing honey tank speak for themselves.

Look through the files of the "B.B.J.," and learn for yourselves how liberal a contributor he has been, not only to the funds of the association, but also to all subscription lists designed to carry out worthy objects in apiculture.

Mr. Cowan became proprietor of the Bee Journal in 1885, and of the Record in 1889, and ever since he has carried on both publications with a success and skill deserving the best thanks of British bee-keepers, not only at home but in the Greater Britain beyond the seas. (Loud applause.)

As an editor of nearly thirty years' standing, his unrivalled knowledge of every phase of apiculture at home and abroad has stood him in good stead—and home apiculture is to-day the richer for his world-wide knowledge.

As a writer, his "Guide Book" has carried his name into every corner of the earth where bee-keeping is being prosecuted. His "Honey Bee" is a standard work on the anatomy and physiology of the bee. His "Wax Craft" is highly appreciated both at home and abroad. As a scientist he is highly esteemed on the Continent and America. Said I not well, when I said he was a many-sided man!

Great as have been the strides made by bee-keeping, we have not yet reached a period when we can fold our hands and rest. Nothing indeed in the whole field of apiculture has reached finality. What has already been accomplished should be looked on only as stepping stones to something yet nearer perfection. At no past time indeed has the clarion call of duty sounded louder than it now does to bee-keepers to be up and doing. Disease calls on us to procrastinate no longer, but to suppress the foul fiend before it suppresses us. Queen-breeding and pure mating must be tackled earnestly if our bees are not to degenerate into

miserable mongrels. Honey selling demands urgent attention. Local associations cry: "Come over and help us!" but this the Development Grant may answer in time! The Parent Society *must* be made more a national institution, more representative of the country as a whole. Judging must be made more a question of training, and less one of haphazard. Research must be systematised. Appliances should be made more uniform, and hives and their parts more interchangeable. Why should we not have model Government apiaries as they have in Canada, New Zealand, and the States? These and a hundred and one other improvements await development in the immediate future.

Mr. Cowan said they were very much indebted to Mr. Macdonald for his paper. He did not see the paper before, or he would certainly have objected to the remarks that were read regarding himself. He was a bee-keeper a good many years before the B.B.K. Association was started, and he had at that time to grope in the dark, as he did not know anyone who could assist him. He remembered quite well that the only papers that touched on the subject of bees were the *English Mechanic* and the *Journal of Horticulture*, and it was Mr. Woodbury's articles that first induced him to take up bee-keeping. He also remembered the first meeting of bee-keepers at the exhibition at the Crystal Palace in 1874. Mr. Abbot came to the show—indeed he was one of the organisers—and gave the demonstrations, and was the first to show us how to do open driving instead of close driving, as was commonly practised then. We were very much indebted to the old bee-keepers who started bee-keeping in movable comb hives in this country as far back at 1870. It was in 1873 that the "B.B.J." was started, and this brought bee-keepers together and enabled the association to be formed. The subscription to the JOURNAL at that time was 10s. 6d., and this was owing to the small number of members. He remembered the early extractors, the "smielatore," which was a box with a grating in it, into which the combs were put for slinging round. It was a clumsy affair, but led to the improvements such as we had them now. Extractors had interested him, and he had carried out a great many experiments to determine the requirements, and it amused him to see ideas that he had discarded introduced from time to time.

Mr. Macdonald had mentioned uncapping knives. The knife he (Mr. Cowan) used was a steam-heated one, with which uncapping can be done very much faster than in the old way. The facilities now are so much greater than in the old days, and bee-keepers are reaping the benefit of what the B.B.K.A. had done for them in the past. Some have said that the B.B.K.A. was doing nothing for bee-keepers, but if they were to come to some of the meetings of the Council, and Committee meetings, they would soon be undeceived, for they would see the amount of work there was to be got through; and he was glad that the delegates of the County Associations were taking their part in this work.

As regards the Bee Diseases Bill, they were in a fair way to get legislation. He was at a meeting of the Board of Agriculture the previous week, and they then discussed matters, practically agreeing to all the B.B.K.A. asks for in the Bill published in the "B.B.J." It will include several items which they thought, as a Free Trade country, would not be conceded, such as excluding the importation of bees from infected countries, and he thought they were in a good way to get all that was wanted.

Mr. Herrod said there is a saying that no man can serve two masters, and as Mr. Macdonald gave him instructions that nothing was to be deleted from his paper, he had (though with great difficulty) prevented Mr. Cowan from seeing it; otherwise he knew that with his usual modesty the blue pencil would have been used to take out the remarks referring to him. His motto was: "Give honour to him to whom honour is due," and he was quite sure they would all agree that Mr. Macdonald's remarks with regard to their Chairman were rather under- than over-estimated.

Mr. Caiby: A friend lent me a book by Mr. Rusden (dated 1679), in which there was an illustration of an octagonal hive. He referred to the queens as kings, and the workers as simply females.

Mr. Cowan said Rusden used an octagonal hive, very much like the Stewarton hive in shape, three stories high. They were ten inches high and fifteen inches across, with a shutter to cover a hole in the top. They had four bars inside, to which combs were fastened.

Mr. Smallwood: Huber illustrated a hive with frames in his book, and Aristotle mentioned hives with bars.

Mr. Cowan: The leaf hive of Huber was the first to introduce the movable comb principle in frames. Aristotle's hives had simple bars to which the combs were fixed.

A vote of thanks was passed to Captain Sitwell and Mr. Macdonald for their trouble in preparing the papers, and to Mr. Frankenstein for reading Mr. Macdonald's in his unavoidable absence.

The following novelties were shown:—

Folding smoker by Mr. Wakerell. One that can be thoroughly washed out; compact; and can be folded up and put into the pocket. The bellows are detachable,

from the fire box, and the nozzle is lined with asbestos to prevent it burning the hands. The approximate cost when made in tin has been estimated to be the same as ordinary smokers.

A quilt was shown by Mr. Roberts, who claims that the material is much stouter than ordinary calico, and the bees will not chew it away.

Mr. Sladen exhibited models of the hind legs of a worker bee to demonstrate the manner in which pollen was collected and packed into the corbicula or pollen baskets. After briefly explaining the different joints and their functions, he called attention to the use to which the set of brushes consisting of ten rows of comb-like hairs covering the inner surface of the metatarsus were put to by the bees. It was well known that these were used to collect the pollen grains from among the hair covering its body, but the method of conveying it to the corbicula was not thoroughly understood. From his observations he had come to the conclusion that the pecten and auricle on the tibia and metatarsus joints respectively, which up to the present have only been thought to have the function of withdrawing wax scales from the wax pockets on the abdomen, played an important part in preparing the load of pollen. After the pollen was collected in these brushes it was scraped from them by means of the pecten, which consisted of a row of very strong comb-like bristles at the lower end of the tibia joint, on the opposite leg; there it was compressed by straightening the leg, forcing the pollen into the auricle at the top of the metatarsus, at the same time squeezing it outwards into the pollen basket *at the base*, where it was guided by the fringe of hair into the right position. He felt quite confident that this was the way in which the pollen baskets were filled, and suggested that anyone sufficiently interested could watch the movements of the leg by pinching the thorax of a bee and killing it. The action of the leg and the articulation of the pecten and auricle, which goes on for some considerable time, could be distinctly observed under the microscope. Any low power objective would do, and he had found a one inch very satisfactory. Owing to the bees' rapid movements, it was exceedingly difficult for the eye to watch the movements of pollen-gatherers, and suggested that it would provide Mr. Bee Mason with a good opportunity to record their actions by means of the cinematograph.

Mr. Crawshaw said that it was an error to suppose that pollen was collected by indirect methods alone. Undoubtedly much pollen was collected in that way, but bees could obtain it directly. He had observed bees working upon the arabis, and that they removed the pollen with their mandibles, steadying the stamen with their front legs. The pollen was actually bitten from the head of the stamen. He believed that they obtained it from other flowers in the same way. After obtaining the pollen, the bee proceeded to knead it with the mandibles, and he had observed that the bee had power to move each mandible independently so as to produce the kneading action and roll the pellet of pollen between the concave faces of the mandibles. He illustrated the motion with his arms, bringing each hand alternately up the other forearm. He believed that this observation had not been previously recorded. Moisture was added at the time of kneading, this moisture being obtained, he believed, from one of the series of head glands, and the moist lump was then transferred to the brushes of the legs, the middle legs accomplishing the transfer from front to back legs. The middle legs played an important part in the cleaning of the thorax, &c., and were themselves cleaned between the brushes of the third pair, through the grasp of which the leg was drawn.

Mr. Cowan said that they were much indebted to Mr. Sladen for bringing the question before them, and also for illustrating it with such a good model. The discussion had been a most instructive one, and he was pleased to learn from Mr. Crawshaw's observations that the bee was able to knead pollen in the way described. He would point out that pollen varies: that from *anemophilous* or wind-fertilised flowers being dry and non-adhesive may require moistening to keep it together, but that from *entomophilous* flowers is already sticky and adhesive, and could be pushed or kneaded without additional moisture. He thought they had had a very instructive and enjoyable evening. (Applause.) The proceedings were concluded with a vote of thanks to the Chairman.

POLLEN COLLECTING.

HOW IS THE POLLEN MOISTENED AND PLACED ON THE HIND METATARSAL BRUSHES?

By F. W. L. Sladen, F.E.S.

If a pellet of pollen from the corbicula of a bee be examined, it will be seen that the raw pollen has been made into a paste with some liquid, and if it be tasted its sweetness will lead to the conclusion that the liquid consists largely or entirely of honey or nectar.

Hoffer, in his work, "Die Hummeln Steiermarks," says that the humble-bee brushes the pollen out of the body hairs with the two first pairs of feet (*zweiersten fusspaaren*) forwards to the mouth, there chews and kneads it with honey and its saliva into a sticky paste, lays hold of it

again with the feet, and presses it—so he says, not mentioning the hind metatarsal brushes or the action of the auricle—with the help of the middle legs on to the corbicula.

I have examined many pollen-collecting honey-bees and several humble-bees, but have been able to find no trace of the moistened pollen in the mouth. It is true that pollen is got out of certain flowers such as arabis, red ribes, and wallflowers with the mandibles, and is sometimes found in considerable quantity in the mouth cavity, but in all the specimens I examined it was dry (I use this word in a relative sense, for most pollens are somewhat glutinous and adherent), as it occurs in the hairs on the face and body, and quite different to the sticky pollen found in the corbicula and on the hind metatarsal brushes. In fact, nowhere but on the corbicula and hind metatarsal brushes did I find the sticky pollen, except sometimes on the tips of the long-branched hairs on the coxæ, and on the hairs on the back (upper) edges of the tibiæ and femora of the middle legs, and then only in heavily-laden bees, where it is reasonable to suppose it had collected accidentally as the result of contact with the hind metatarsal brushes. The metatarsal brushes of the middle legs were in most specimens filled with pollen, but it was always dry. Dry pollen also was often found in the bristles of the fore-feet, on the underside of the fore and middle femora and tibiæ (between which possibly pollen is conveyed) and on the long-branched hairs clothing the underside of the head, thorax, abdomen, and upper joints of all the legs.

These facts have led me to doubt whether the pollen is moistened in the mouth as Hoffer supposed, and to think that it may be moistened instead on the hind metatarsus with the tongue. The evidence in favour of this view being inconclusive, I cannot state positively that it is the correct one, or that Hoffer is wrong; and this article will be devoted to stating the facts I have been able to glean in support of either view.

I find that the tongue can reach the hind metatarsi, and there are several ways in which it might moisten them. For instance, it might pass into the V-shaped passage between the inner and outer combs at the apical end of the metatarsus, or it might come into contact with the bristles on the lower or front edge of the metatarsus. But I think the most likely method would be one in which the tongue moistens both metatarsi simultaneously. While the hind metatarsal brushes are being rubbed together a rough Y is produced, the metatarsi forming its stem and the hind tibiæ its branches. If the tongue were drawn through the fork, or the partly divided stem of this Y, it would moisten the two metatarsal brushes simultaneously. A careful examination of pollen-laden bees returning home from the fields shows that the end of the hind tibiæ on the inside and the basal and upper portions of the metatarsal brushes, in other words the part nearest the auricle, are generally more moist than any other parts, which is what one would expect if this is the method of moistening. The rubbing of the metatarsal brushes together, which we know takes place frequently, would soon distribute the honey all over them. The moistening with the tongue (presuming it occurs) probably takes place during the flight from flower to flower.

Several queen humble-bees working on flowers and carrying loads of moistened pollen in their corbiculæ were found on examination to have the metatarsal brushes of their middle and hind legs filled with dry pollen, but a triangular portion of the hind metatarsal brush, including the corner containing the auricle, was wet.

I have watched honey-bees collecting pollen on the flowers, but have never seen the tongue brought near the hind legs; indeed, it can only just reach them. Possibly the middle or front legs are used as agents for conveying the honey. In the humble-bee the tongue is longer, and it could more easily moisten the hind legs in the way suggested.

In favour of the moistening-in-the-mouth view, comparing the pollen moistened in the mouth to a ball of dough, we know that the latter, to be easily kneaded or conveyed, must be kept dry and floury outside, and the absence of traces of it could be accounted for by the presence of the dry pollen where it is supposed to be kneaded and passed, namely in the mandibles and on the front and middle feet. We know the pollen is collected in these. Moreover, the constant working up and combing of the moistened pollen, without the addition of any dry pollen, on the hind metatarsal brushes would cause these brushes, in time, to become sticky, just as the board and rolling-pin get sticky in working up a ball of dough if one does not add flour.

On April 13th I saw a queen of *Bombus pratorum* busy in a dandelion flower, and about two seconds after she had flown from it I caught her and examined her. Her corbiculae contained tolerably large loads of white pollen. Now the pollen of the dandelion is yellow, and on closer inspection I saw that the last (perhaps the last two or three) little contributions that the auricles had made to the corbiculae were of yellow pollen (a good proof, if further proof were needed, that the auricle serves the corbicula). The hind

metatarsal brushes contained wet yellow pollen. The hairs on the underside of the abdomen contained dry yellow pollen. The brushes of the middle metatarsi were densely filled with dry, yellow and white pollen. The mandibles, mouth cavity, and tarsi and metatarsi of the fore-legs were densely covered with dry white pollen. I think the bee had probably been getting its white pollen from some wallflowers growing near, from which it would be gathered in the mandibles, while the yellow pollen from the dandelion was no doubt collected by the body hairs. If the dandelion pollen was moistened in the mouth it left no visible traces there.

Replying to "G.M's" query (8426) in last week's "B.B.J.." I would say that in *Apis* the face of the auricle is covered with pointed teeth, sloping in the direction that the pollen moves, but in *Bombus* there are no teeth, and the surface is finely rugulose. The auricular teeth are very well developed in *Apis dorsata*, where they number over two hundred; in *A. mellifica* they are fewer, and many of them are stunted and in *A. florea* they are rudimentary. Their function is probably to convey and knead the pollen.

In trying to account for the moisture in the pollen the possibility that it might be secreted through the comb at the end of the tibia, through the excipula, or through the joint between the metatarsus and tibia crossed my mind, and "G. M.'s" suggestion that it may possibly be secreted through the face of the auricle is quite as probable, if not more so. But a rough examination of these surfaces gives no indication that they contain pores, and it would be strange if a sweet liquid resembling honey were secreted in the leg. Nevertheless, these are ways of accounting for the presence of the moisture that should be further investigated.

I find that the inner side of the auricle is bare in *Apis dorsata*, and nearly so in *A. mellifica*, but slightly hairy in *A. florea*. It is bare in all the British *Bombi*, except *lapidarius*, *terrestris*, *lucorum*, *pratorum*, *lapponicus*, *latreillellus* and *distingendus*. This distinction is useful for separating some of the species of *Bombus* that otherwise resemble one another closely.—F. W. L. S.

REVIEWS.

Pearce Method of Bee-keeping, by J. A. Pearce (*American Bee Journal*, 117, North Jefferson Street, Chicago, U.S.A., price 50 cents—2s. 1d.).—This is an illustrated pamphlet of twenty-eight pages, explaining the keeping of bees successfully in upper rooms, attics or lofts, by which means anyone, either in town or country, is enabled, with only a small expenditure of labour, to get a good supply of honey without coming in contact with the bees. By the method advocated, the author says the bees will not swarm in the busy season, but continue to work and secure the honey-crop year after year. The author also tells the commercial bee-keeper how he can divide his bees when he wishes to do so, instead of waiting and watching for them to swarm. It can all be done on the same day, as the time required for this operation is merely nominal, for no swarms issue and go away. These methods are fully explained in this book.

The Small-holder's Handbook, by W. M. Elkington (published by L. Upcott Gill, Bazaar Buildings, Drury Lane, London, W.C., price 3s. 6d.).—This is the best work of its kind we have seen; it is profusely illustrated, and is thoroughly practical. The author has wisely taken advantage of the knowledge, and obtained the help of experts in the different branches of work followed by small-holders, instead of getting some person in the office who has no idea whatever of country pursuits to write up the matter from text books and encyclopædias, which, since the small-holder boom began, has been the case with the majority of publications dealing with this topic. We find 244 pages of closely-printed matter dealing with the subject thoroughly, including such subjects as: How to obtain a small-holding, cottages and out-buildings; buying, breeding, and the management of all kinds of live stock, such as pigs, horses, donkeys, goats, poultry, bees, &c.; market gardening; fruit and fruit growing, as well as the cultivation of market flowers. Such names as Mr. H. S. Holmes Pegler in connection with goats; Mr. W. D. Drury on gardening; Mr. H. E. Faweus on dairying; Mr. J. B. Lamb on bees; and the Editor on poultry, will give some idea of the high standard of this work. We would strongly advise all interested in intensive culture to obtain a copy of this useful book.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ROSS-SHIRE NOTES.

[8431] Bees are in ideal condition here this spring, all my twelve stocks being queen-right, strong, and possessed of abundant stores.

No creeping, languid bees are to be

seen, but every entrance is thronged with bustling pollen bearers, while the great warmth of the quilting points to rapid brood nest expansion.

The double-storey colonies, as usual, lead, and once again endorse the policy of leaving on over winter a stored shallow super.

One such colony, divided into three, gave me nearly 200lb. of honey in sections last season.

The prolonged honey-flow of 1911 was particularly favourable to dividing, but the coming summer may demand entirely different management on our part. With a long-drawn-out honey season extension of stocks in more hives pays all right, but in the case of a short and sharp honey-flow concentration gets the full supers.

A double-storey colony contracted to a single tier of frames, or the entire population of two medium lots joined on the brood nest of one, could store a heavy surplus, while divided they might do little more than store in one super.

Bee-paralysis.—This nightmare, like the sword of Damocles, still hangs suspended over our heads, but its proximity is less terrifying than formerly. A year ago, bee-keepers were helpless in face of the disease. Total destruction of bees and combs was the usual advice and the only alternative to letting diseased stocks die out at leisure. However, all that is changed now, and different remedies for bee-paralysis are on trial. Personally, I have no need for any cure, as my colonies seem perfectly healthy, although some of them have been on infected combs for over nine months.

My experience is possibly too brief to be conclusive, but other bee-keepers have proved that healthy bees can safely be put on the brood combs of diseased colonies. On page 165 of last year's "B.B.J.," Mr. Stapleton tells how his apiary, almost ruined through paralysis, was resuscitated by artificial swarming and increased to ninety-five colonies, all on combs of which the bees had died.

Again on page 407, Mr. Muir tells of losing eighty-six colonies and then saving the remainder by destroying the adults and running healthy driven bees on to their brood. As Mr. Muir's practice coincides with my own views on the subject, I had the curiosity to write him for the further history of Kirkcowan apiary. His reply, received the other day, speaks of eighty-five perfectly healthy and vigorous stocks, made up of driven bees hived on previously diseased combs.

Mr. Muir *did not* disinfect his brood combs or boxes. Neither did I, but, considering the polluted floor board a source of danger, it was soaked with petroleum, set on fire and thoroughly scorched.

Will these simple methods of cure prove permanently successful? Time will tell. Meantime we can only "wait and see."—J. M. Ellis, Ussie Valley.

NOTES FROM DERBYSHIRE.

[8432] It is disheartening to local bee-keepers to learn from an answer you recently gave to a correspondent, that the dreaded "I.O.W." disease has reached this county. It behoves us all to be on the watch, and to use the utmost precautions to keep our individual apiaries free from this pest if possible. It is to be hoped that, when the new Bee Diseases Bill becomes law, a great step towards conquering this disease will have been taken.

While on the subject of the Bill, I may say that I for one am in favour of compulsory inspection of apiaries, if reasonably carried out. Why should it be left to the sweet will of the owner of an apiary to notify disease when he thinks fit? The same keepers of bees who at present refuse to allow the entrance of an association expert into their apiaries will be the ones who under a system of optional notification will neglect, or even refuse, to report disease to the local authority.

In this county, under a system of examination by the association experts, we have reduced foul brood cases among members' stocks to even a less percentage than that reported as 2 per cent. for Notts, and this, although our touring experts constantly complain that here and there are apiaries whose owners are not members of the association, and who constantly refuse them admission, whilst there are the best of reasons for believing these apiaries to be centres of infection and re-infection for the whole district. Perhaps if Mr. Woodley (8422) had one of these disease disseminating apiaries in proximity to his own he would change his opinions.

My experience of touring experts is that they can be trusted to do their work thoroughly and well, and without danger of being disease carriers.

Spring is now with us, and our thoughts turn to preparation for the summer honey-harvest. It is a pleasure to be able to report that I never remember a spring with bees in such a forward condition. I have stocks with five and six frames of brood already (April 17th). This may not compare favourably with some of the more southern counties, but for Derbyshire it is good. Last year at this time my stocks were broodless, following a period of six weeks or more of strong east winds. This early activity carries with it a danger that stocks will die out for lack of stores, and to all bee-keepers I would say: "Be on the safe side, and if in doubt, feed."

To the controversy on heather-honey as a winter food, I would like to add my experience: For some years I have taken my bees to the moors, not so much for surplus as to save my sugar bill. It pays,

and I may add that I have yet to find that heather-honey is detrimental as a winter food. To save any mis-apprehension, let me also state that the source of supply is the ling (*calluna vulgaris*), and not the bell heather or the cross-leaved heather. I quite agree with one of your correspondents, that what is good in one case and in one part of the country, may not be so in another district.—D. Wilson.

BEES AND THE ECLIPSE.

[8433] I noticed on the 17th inst. that the bees from my twelve hives were not flying from 11 to 12.30 p.m., although the effects of the eclipse of the sun at that time did not prevent altogether its shining with a subdued light; generally speaking, it might have been taken for a hot and sultry day, although there was not a cloud visible anywhere. I wonder if any other bee-keeper noticed an absence of flight among the bees.

Fruit trees of all kinds are just now a perfect mass of bloom, and everything points to the abundant gifts in store. Looking forward to the fulfilment of the prospects in view, with best wishes to all fellow-craftsmen, I sign myself—W. W. K., St. Brelades.

"ISLE OF WIGHT" DISEASE.

[8434] I promised last autumn to send a report on how my apiary fared with regard to "Isle of Wight" disease, and I am pleased to say my treatment has been a complete success. I had forty-eight stocks left in October; a queen was cast out of one on October 18th, minus a wing, which left only forty-seven in condition for wintering. I have every stock with a living queen at this date, and we have eighty-five stocks in all in most satisfactory condition; in fact, we could make one hundred out of them if we had space and queens, a great many covering nine frames. The diseased stock mentioned in my letter of October 1st last (page 407), in which the hive was not disinfected, is now one of the very best in my apiary. It was operated on on August 25th; there would not be a living bee left of the small lot of driven ones, in three months. It had nothing to depend upon but the brood that was hatched out of the combs from which we took the bees away.

We went through all our stocks on March 11th, putting naphthaline in each. The past few days have been splendid for the bees. It was a fine sight to see them flying, and apparently not an unhealthy bee in the whole apiary. I would be very pleased if an expert could examine this case for himself. I have a number of witnesses to prove my contention that neither brood-combs nor hive will carry infection, but I have something else to tell. The two stocks that showed no signs of disease all last summer and autumn I removed out of the apiary, but they took the disease in the winter, so I lost every stock, totalling eighty-eight, as well as the two stocks we bought from England. These latter gathered honey in May and June, as well as in the autumn, but we had to kill them months ago. A neighbour had a small apiary; his bees showed no signs of disease all last summer or autumn, but these are now dead, also two stocks he bought from Whitchurch, Hants. We are keeping a sharp look out, and hope to get the place completely cleared of disease.—A. Muir and Sons, Kirkcowan.

AN EARLY SWARM.

[8435] I am wondering if I am the first to report a beautiful swarm, hived April 21st. The parent stock has also supplied two frames of brood, and has a section-rack well forward. I lost my best stock with "Isle of Wight" disease, and unfortunately found two more affected badly with foul brood, but I think I have got it under now, and the best time is to come for treatment. I can only hear of five stocks within a good radius here, and I possess four now. It does seem hard to keep losing one's bees so. Has the theory ever been put forward of foul brood being hereditary? One of my diseased stocks was headed by a queen bred by me last year, and the other by a purchased virgin, fertilized from a stock diseased early in the year, but which was quite healthy in the autumn. There are no other bees near mine, nor have been for two years, and I was most particular in having clean hives and giving them a new start.—A. H. H., Bramley.

BRIEF REPORTS.

Bees are going strong here; the season is quite three weeks in advance of previous years. I have had to super one of my stocks already, and I have not stimulated it at all.—F.S.E., Ipswich.

On transferring some bees to a clean hive to-day (20th inst.), I found several drones newly hatched. I think this must be exceptionally early.—P.F.J., Blakeney, Glos.

My first swarm issued on Sunday, April 14th. This is the earliest I have ever had. Stocks are very strong; the bees are now hanging out at entrances in a long cluster. I must give them more room at once.—H.S., Willingham, Cambs.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

The Ideal Heather Hive (p. 106).—"T. D. N." refers to his hive as "another

story." It is a story we should be glad to hear. Facility of feeding, of packing, and of transportation are such practical points, and involve such diminution of labour, which is, after all, the principal item of cost, that all practical bee-keepers read and digest any sound article on construction which bears upon this point. We are not all convinced that the final word in hive construction has been written, as witness the eagerness with which we inspect, handle, discuss and criticise any new invention in this direction. So that, if "T. D. N." will favour us, having already hinted that he has that to give which we need, we shall be indebted to him. The question of winter stores discussed by him is no doubt highly important, but the labour involved in substitution is so considerable that unsuitable food may often remain by default, whereas the ideal hive may provide means for easily disposing of all difficulties. Personally my ideas run towards a shallow hive, in which the heather-honey mostly goes above, sufficient stores being supplied upon return from the moor.

A Heavy Skep (p. 107).—How big was the skep which weighed 98lb.? Or of what material was it constructed? Its weight would suggest cast-iron or some similarly heavy material, or the crock and stand may have been accidentally included! With a generous allowance for tare, the contents weighed more than four racks of sections, so that its internal dimensions must have been, one would think, above the average.

Winter Stores (p. 123).—"D. M. M." refers to the spoonful of vinegar which should be placed in the brew. I must say that I distrust this accepted teaching. Vinegar is prepared from a variety of substances in numerous ways, long and short and, occasionally maybe, incomplete. Is there any guarantee that the fermentative action will not continue when fresh material is supplied? In the past I have, rightly or wrongly, attributed some soured stores to this cause. At any rate, I have discontinued the use, and now invariably use the more convenient cream of tartar for the purpose. I should be glad to know whether anyone has tried Rochelle salts. Perhaps Mr. W. F. Reid would tell us whether they would be deleterious in any way.

Legislation (p. 124).—In reply to Chas. H. Heap, the Board of Agriculture is quite alive to the dangers of importation of bees and honey. The danger of disease from surplus combs is, in my opinion, non-existent or trifling, and reduction of disease will still further reduce the possible danger.

In reply to R. B. Manley, minimum notice has been fully considered, and such will probably be stated. There is no necessity for the inspector to examine personally, as he will see by careful perusal of the draft. To limit destruction to the infected is not in line with the present practice of the Board, and under some circumstances it is considered wise to destroy apparently healthy stock. In such cases, compensation is paid.

Sections (p. 112).—Mr. Herrod refers to epicurean selection of purchase. But how few epicures exist. Would that there were more of them, and then our beautiful sections would be properly appreciated, and they would not be undersold by those who hold that "a section is a section." An attempt is being made in America to establish standard rules of grading, and we could well do with something of the kind over here.

Propolised Sections (p. 112).—The manipulation here advised can be carried out more easily if the shallow-frame and section-racks agree in outside dimension. Why not, therefore, have both made to take hanging frames? The same rack would serve both purposes if the shallow frames be reduced to $4\frac{7}{8}$in. deep. The sections produced in such frames are free from propolis, and the labour of preparation is greatly reduced. Recently I sent Mr. Herrod a couple of such sections (five by four) produced at the moor, and I think he would agree that they were both clean and attractive.

Provisional Protection (p. 115).—If, as Mr. Smallwood suggests, Nature had not provided the bee with defensive weapons, we should hardly be discussing the matter to-day. He overlooks, however, the existence of stingless bees, which are more than able to hold their own with their teeth. It is interesting to reflect that such weapons have been provided or evolved and exercised in defence of property, and in these days of predatory onslaught, further interesting reflections might be indulged upon—the ancient nature, and the benefit to the community of such rights! But that again is another story.

Terminology (p. 116).—Just what does "Rector" mean by perpendicular to the entrance? Apparently the sticks are placed horizontally. Possibly the intention is that of right angles to the hive front, where the combs are "parallel." And in stating "dummy-board," the intention is obviously division-board, for hive-space can be contracted satisfactorily by the use of dummies, without reducing the ventilation. I think contraction to the size of the stock is sound practice at certain seasons, but "Rector" is evidently not troubled by weaklings. I am in considerable sympathy with his let-alone methods in general, although in his case they would seem to be carried to extremes.

THE "B.B.J." AS AN ADVERTISING MEDIUM.

If you have anything to sell, advertise in the BRITISH BEE JOURNAL. The following is one of many similar letters received from advertisers:—

Dear Sir,—Will you please stop the second insertion of my advertisement of a Stock of English Blacks? Your journal proved such a good medium that they were sold on the day of publication of last week's issue, and I have had many enquiries since. —Yours truly, W. E. DIGHTON, April 22nd, 1912.

Notices to Correspondents.

A. L. Y. (Hitchin).—*Cures for "Isle of Wight" Disease.*—The inventor of the "cure" in question gave a description in BEE JOURNAL for April 18th.

T. M. G. (Renfrew).—*Good Bee District.* —We can speak from personal knowledge as to Hawkhurst. It is a good district for bee-keeping.

W. M. L. (Lancs).—*"Isle of Wight" Disease.*—It is a well-known fact that Hampshire has suffered considerably from the disease.

E. F. L. (Lee).—*Joining Bee Associations.* —(1) The association you name is now defunct. Apply to Mr. A. Wakerell, 21, Mansfield Road, Croydon (Croydon B.K.A.), or Mr. J. M. Bates, "Stonycroft," Warren Road, Bexley Heath (Crayford and District B.K.A.), whichever suits you best. (2) The reason why the bees are casting out the brood is, no doubt, because it has been chilled.

Suspected Disease.

R. F. P. (Perth), T. J. A. (Norwood), T. A. C. (Kirtling), E. G. F. (Baildon), and F. N. (Tattenhall).—We regret to say that outward signs unmistakably indicate that bees have died from "Isle of Wight" disease. If you wish for further confirmation send a few bees, alive if possible, to Dr. Malden, Medical Schools, Cambridge.

L. H. (Hampstead).—The bees show every outward sign of "Isle of Wight" disease.

E. A. C. L. (Winchmore Hill).—The interior of parcel was simply a sticky mass through leakage of the honey, therefore we could do nothing with it.

BOWYDD (N. Wales).—So far as we can see it is merely a case of spring dwindling. As there is no disease you can use the honey.

W. T. H. T.—We are very much afraid from what we can see that it is the commencement of "Isle of Wight" disease. Send some bees to Dr. Malden, Medical Schools, Cambridge.

"Q" (Birmingham).—Comb is affected with foul brood.

H. E. (Kidderminster).—Comb contains dry pollen. Remedy: melt the combs down and replace with full sheets of foundation.

E. A. S. (Leamington).—The bees are too dry for us to form any idea as to cause of death.

ANXIOUS (Luton).—The bees are suffering from "Isle of Wight" disease.

W. J. M. (Weston-super-Mare). — The symptoms point to "Isle of Wight" disease. Send some to Dr. Malden, Medical Schools, Cambridge.

HAMPSHIRE NOVICE.—(1) The bees show every symptom of "Isle of Wight" disease, and you were wise to treat them as described. (2) The building of comb in the candy box points to the fact that the bees require more room.

BEGINNER (Crowborough).—Bees are suffering from "Isle of Wight" disease. Artificial swarms should not be made until the hive is literally *full* of bees.

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Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½ *in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

BARGAIN, 1 Extractor, geared, with lids, cost 50s., for 22s. 6d.; 1 strainer and ripener, 6s.; 1 wax extractor, 5s. 6d.; 15 W. B. C. Hives with 9in. lift, complete, 6s. 6d. each; 10 ditto with 2 6in. lifts and zinc roofs, 7s. 6d. each; 36 supers for sections, complete with tin dividers at 1s. each, 10s. dozen; 6 Brice's swarm catchers, 1s. each.—GARDNER, Methwold, Norfolk. u 59

OPPORTUNITY to learn beekeeping; pupil joining now can see Isle of Wight disease being cured.—THOMAS, Coedmelyn, Stackpole, Pembroke. u 58

CHAPMAN'S Honey Plants, 20, post free, 3d.; seeds, 2d.—STEVENS, Churchill, Oxfordshire. u 56

WANTED, Stocks on frames, at once; also swarms, May and June.—POSTMASTER, Breachwood Green. u 56

MOTOR-CYCLE, lightweight, Motosacoche, in good condition, sell, £20, or take bees part exchange.—THOMAS, 59 High-street, Cowbridge, Glamorganshire. u 55

HEALTHY native Bees, strong Nucleus, 4 frames, 16s.; 6 frames, 20s.; sealed brood in all combs, boxes allowed for if returned at once.—H. GRIST, Shepton Mallet. u 54

3 CWT. Honey at 56s., F.O.R. sample, 3d.—NIGHTINGALE, Doddington, March, Cambs. u 53

HEALTHY, natural swarm, out April 22nd, on four frames, packed free, 18s. 6d.—MULLEY, Poole House, Upton-on-Severn. u 51

Editorial, Notices, &c.

CUMBERLAND AND WESTMORLAND B.K.A.

The annual general meeting of the above Association was held in the Crosthwaite Parish Room, Keswick, on Saturday, the 13th April. The chair was occupied by A. Mitchell-Dawson, Esq., J.P., C.C.

The report and balance sheet for 1911 were presented, which show that although a successful season had been enjoyed in both counties, it could not be claimed that the harvest had reached anything like record figures. The heather bloomed unusually early, and bee-keepers who had their hives early on the moors secured a good crop of heather-honey of the finest quality. The subscriptions amounted to £97 5s. 6d. The Cumberland County Council grant was again £100; while the Westmorland County Council allowed £25, being an advance of £10 on their grant for 1910. There is, however, a deficit balance of £2 14s. 8d. on the year's working, which was considered very satisfactory as the deficit balance at the end of 1910 was £18 5s. 6d. On the proposition of Mr. Martin, which was seconded by Mr. Adamson, the report and balance sheet were passed.

Lord Muncaster was re-elected President.

The Vice-President and members of the executive committee were also re-elected with additions to fill positions rendered vacant by death or otherwise.

Mr. G. W. Avery was unanimously re-elected Hon. Secretary and Treasurer; and Mr. J. B. Millican, of the Bank of Liverpool, Ltd., will again undertake the duties of Hon. Auditor.

Mr. Mitchell-Dawson proposed, and Mr. Swinburn seconded, a hearty vote of thanks to the members of the Council and all officers for their services during the past year.

A vote of thanks to the Chairman concluded the meeting.—G. W. Avery, Hon. Sec.

NORTH NORFOLK B.K.A.

The annual meeting of the North Norfolk Bee-keepers' Association was held at the Concert Hall, Holt, on March 21st, under the presidency of Mr. H. Bond.

Mr. Platten, the expert, presented his report, and said he found no cases of foul brood in any of the apiaries he had visited, but that he would impress upon every member, and also upon those who were not members, the urgent necessity of cleanliness. In many cases there was great need for transferring into clean hives.

The Hon. Secretary presented her account of receipts and payments, showing a balance in hand of 8s. 3d. Miss Leaver expressed a desire to be relieved from the work of secretary, as she could not find time to do the work thoroughly. Her resignation was received with much regret, and a vote of thanks to her for her past services was unanimously accorded.

Dr. Wardleworth, of Sheringham, was proposed and seconded as the successor to Miss Leaver, and he kindly agreed to accept the office of secretary. The president, vice-presidents, committee, and other officers having been elected, a vote of thanks was proposed to Dr. Arthur Preston for the use of his room free of charge, and to the Chairman for presiding. —*Communicated.*

NORTHAMPTONSHIRE B.K.A.

The twenty-ninth annual meeting of the Northamptonshire Bee-keepers' Association was held on March 30th in St. Giles' Church Buildings, Northampton. The Rev. J. P. Frend presided. The hon. secretary presented the annual report. The year closed with a cash balance in favour of the association of £14 17s. 10d. The past season had been a good one, and some large takes of honey had been reported.

The annual show was held by kind permission of the Corporation in Abington Park, and was considered to be the largest and finest display ever given by the association. Mr. W. Herrod, F.E.S., and Mr. Foot acted as judges. On the motion of Mr. England, seconded by Mr. Roberts, the report and accounts were agreed to. The election of officials took place. Mr. R. Hefford proposed, and Mr. Billson seconded, the re-election of Mrs. Irene Osgood to the presidency, which was agreed to. Other officers were re-elected. It was decided to approach the Corporation with a view to holding the annual show in Abington Park in August.—*Communicated.*

NECTAR PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

(*Continued from page* 82.)

No. 16. GOOSEBERRY (*Ribes grossularia*).

NAT. ORDER: *Ribesiaceæ.*

The gooseberry is not considered to be a native of Great Britain, but it is certainly a fruit better adapted for cold than warm climates. It must have flourished here in the time of Henry VIII., for a writer on husbandry—Tusser by name—says:

"The Barberry, Respis (raspberry) and Gooseberry too,
Look now to be planted, as other things do."

In the South, gooseberries are smallest in size, and poorest in flavour, but improve in both qualities as one goes North

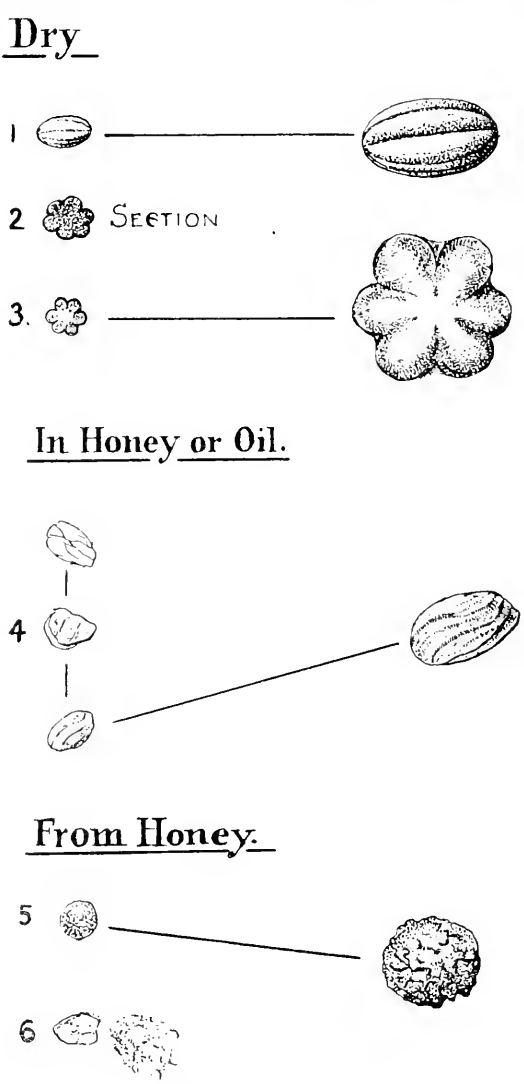
into colder regions. In England the Lancashire gooseberries are said to be the best, but about Edinburgh, where gardeners pay great attention to them, they are found in perfection.

There are various colours—white, yellow, green and red—and of each colour many varieties, more than one could have any idea of, unless they had been to a gooseberry show—quite common in the North—or consulted the catalogue of a specialist in their production.

The plant is mostly known as a bush, but under favourable circumstances it will assume the pretentions of a tree, which may attain a great age. It can also be easily trained into any conceivable shape. At Duffield, in Derbyshire, there was a bush some years ago the age of which was proved at the time to be 47 years, and the extended branches of which measured no less than 12yds. in circumference. In the garden at Overton Hall, near Chesterfield, in the same county, there were two remarkable gooseberry plants which had been trained against a wall, and which measured upwards of 50ft. each from one extremity to the other. On the other hand I see in various nurseries I visit, gooseberry bushes about 9in. in diameter only, on a bare standard stem 5ft. to 6ft. high.

It is one of our earliest fruit trees to bloom, and, because of this, is a great help to our bees. It yields nectar in abundance, and a fair amount of pollen. I find bees constantly upon its blossoms; in fact so assiduous are they in their attention to them, that I have often thought they would damage the petals—or rather in the case of the gooseberry flower, the sepals—before they had done yielding nectar.

The gooseberry, too, is just one of those which easily prove the benefit accruing to fruits by the visits of the bee, blooming, as it mostly does, in inclement weather and when bees are not able to get far afield. It is always found that there is more fruit in the vicinity of the hives than on those bushes further away from them.



POLLEN OF GOOSEBERRY.

The pollen by transmitted light is a dull greenish yellow, but a dark green when in a mass on the leg of the bee. When examined it is found to be of an ovoid form measuring $\frac{1\frac{1}{2}}{1000}$ by $\frac{3}{1000}$ of an inch. It has six flutings or corrugations reaching from end to end, as general view is seen at No. 1, and its enlargement, No. 2, is a section of the grain across the centre; with a view of the end at No. 3 and its enlargement.

When placed in water or oil it at first appears to be without definite form, as it makes the grains transparent, and, of course, the grooves on the underside are seen through those on the top, making it appear flat with an irregular outline, and just a few lines in different positions on each, owing to the varying angle at which they lie. The same applies to the grains when put into honey.

After being in honey for some time and then abstracted from it in the usual way by the addition of water to reduce its

density, I find the grain has taken on the form of a wrinkled sphere (No. 5), and this is the only change I have known it to undergo. There are no processes on it, and none are produced in this later change, as is generally the case; but in the majority of these grains, the fovilla is escaping through a ruptured pellicle (No. 6) or the pellicle is entirely empty. The pellicles show the same markings as when in oil.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8436] April, 1912, will not be noted as a wet month—to-day, the 22nd, and not a single shower of rain yet, but every tree is loaded with bloom and the bees are in full work, securing a supply of food so needful for the building up of strong stocks for the main honey-crop later on. I heard from a friend in Sevenoaks district who has supered his stocks, that they are filling the sections fast. We in this district are not thinking of supering just yet, but I shall insert frames of wired foundation at once to give extra room where only nine frames are in the brood-nest, and if the fine weather continues supers will be put on the strongest stocks, but if a break in the weather comes plans will have to be altered to meet the altered conditions. Where swarms are expected hives should be ready for their reception, and if increase is not desired, give supers early and put an excluder under the rack of sections, especially if some of the sections are already drawn-out. Excluder should be always put under extracting combs. To those in an early honey district, *i.e.*, with abundance of horse-chestnut and sycamore trees, I should advise a box of shallow-combs as the first super, then a rack of sections underneath just as the bees begin to seal the tops of the honey in the shallow frames; a strip of inch wood can be nailed around the top edge of the section-rack to take the bearings of the box of shallow frames.

Spring-cleaning should now be done, and the condition of the colony noted on the hive-card. A penny packet of post-cards will make some twenty-five very good hive-cards; and if the "Isle of Wight" disease is anywhere in your vicinity and you have some spare hives, give them a painting of "Ayles'" solution. Regarding this remedy I have been assured that Mr. Ayles' bees have lived and thrived while other apiaries around have died out with "Isle of Wight" disease. This, I think, is good proof of the efficacy of the remedy. I am thankful I have no disease, either in or near my apiary, but I have ordered ½gall. of the solution to have on hand if I should at any time see symptoms of the disease.

If foul brood is round about I advise using "Herrod's Apicure" instead of naphthaline—it is efficacious in the case of wax-moth I am informed; but if possible keep your colonies strong, and the wax-moth will not trouble you. Strong stocks will not allow them to get a chance of egg-laying. Do not forget that a constant supply of water is required by the bees when breeding is going on.

I never remember my bees in better condition in April or working more vigorously than at present, and from enquiries I have made in villages all round the bees have come through the winter with little or no loss.

A Closing Note on the Bee Diseases Bill.—The Editors do not think we need trouble regarding this proposed legislation, but I insist that *notification* should be *part* of the Bill and not be left to local authorities to include it or not in any by-laws they choose to make; many of these gentlemen have no knowledge of bees or bee-keeping.

"J. M. B." [8404] refers to a weak point, which should be amended, and I hope he will write to his M.P., and also every other bee-keeper will do so, and call his attention to the matters which affect their particular interests. I notice some gentlemen are hurt by my remarks on "germ-carrying." If they will write me privately I may be able to satisfy them that I can back-up my assertions with facts.—W. Woodley, Beedon, Newbury.

SEVENTEENTH CENTURY BEE-KEEPING.

[8437] A friend to whom I had the pleasure, through you, of giving first lessons in bee-keeping, has lent me a book, "Willich's Domestic Encyclopædia," 1802, Vol. 1, an 8vo volume in its original binding. To my surprise and delight I find it contains no less than thirty-five columns devoted to bees, bee-keeping, and appliances. It may not be news to some of your readers, but it certainly was to me, to learn that a bellows smoker, similar in form (but for the bellows) to that we now have, was in use about 1790; that the system of open-driving, from skep to skep, which I understood Mr. Cowan, at the recent conversazione, to say he learnt of for the first time at the Crystal Palace about 1870, was practised about the same time, that artificial swarming was in vogue,

and lastly, omitting numerous other interesting points, that the principle of an extensible and contractible hive, with a movable roof and floor-board was described and illustrated, together with parallel bars, from which the bees were induced to hang their combs.

To be sure, the writer gets "a bit rocky" when he comes to the natural history of the bee, but, on the whole, it is surprising to see in how many points he agrees with the best practice of to-day. As an example of error, take his description of the drone: "Drones are smaller than the queen and larger than the working bees; and, when on the wing, they make a greater noise. Their office is to impregnate the eggs of the queen after they are deposited in the cells; but when this is effected, as they become useless to the hive, they are destroyed by the working bees without the power of resistance as they have no sting." He must have argued from the analogy of the spawning of fish. On the other hand, is not this a fairly good description of a modern hive? "A good bee-hive ought to possess the following properties: First, it should be capable of enlargement or contraction, according to the numbers of the swarm; secondly, it should admit of being opened without disturbing the bees, either for the purpose of cleaning it, of freeing it from insects, of increasing or dividing a swarm, or for the admission of a stock of provisions for the winter; thirdly, it should be so constructed that the produce may be removed without injury to the bees; fourthly, it should be internally clean, smooth, and free from flaws." And how right he is when he points out that strength of hives, not numbers, should be the apiarist's aim! . . . "We obtain the advantage of having the hives always well stocked. This ought to be the object of everyone who cultivates bees; for it is allowed to be of more advantage to keep the hives well stocked than to increase their number; and, in fact, it has been observed, that if a hive of 4000 bees give 6lb. of honey, one of 8000 will give 24lb." A little out in his numbers perhaps, but quite correct in his deductions. Then, open driving:—"Remove the hive (skeps he refers to) to a darkened room, that it may appear to the bees as if it was late in the evening, then gently invert the hive and place it between the frames of a chair, or any other steady support, and cover it with an empty hive, raised a little towards the window, to give the bees sufficient light to guide their ascent. Hold the empty hive, steadily supported on the edge of the full hive, between the left side and the arm" (driving irons were still to come, it seems) "and continue striking with the right hand round the full hive, from the bottom upwards, and the bees, being frightened at the noise, will ascend into the other. Repeat the strokes, rather quick than strong, round the hive, till all the bees are gone out of it, which will be in about five minutes. . . . When they are all out of the full hive, that in which they are must be placed on the stand, to receive the absent bees as they return from the fields."

Recipes given for stimulation and for curing disease are more quaint than practical, but I have occupied quite enough of your space already. If the matter is of interest to your readers, I shall be happy to give further extracts in later issues.—J. G. DALZELL.

"A PLEA FOR THE SKEPPIST."

[8438] I was very much surprised when I read Mr. L. S. Crawshaw's "plea for the skeppist" (page 48, Feb. 1st). I had always considered Mr. Crawshaw a pretty level-headed writer, and I can only think that some allurement must have overshadowed his better judgment when he changed his views from being a non-skeppist to pleading for their use. I take it for granted that Mr. Crawshaw refers to fixed-comb skeps. I had three on exhibit containing movable frames and bees in full working order; to these latter there can be no objection, the chief point being that the combs shall be movable for inspection. I maintain, and my contention was backed up by every advanced bee-keeper throughout New Zealand, that there was no hope whatever of controlling disease in bees while fixed-comb hives were being used. This conclusion did not come suddenly, but after bitter experience extending over a quarter of a century.

I can see nothing in Mr. Crawshaw's plea that should induce anyone to support the continuation of a decided evil. I have every sympathy for those who "are too poor or too ignorant to keep bees as they should be kept" (see Mr. Crawshaw's letter), but this would not induce me to consent to their keeping bees in a manner dangerous to the best interests of the industry. I am very sorry to see by Mr. Crawshaw's letter that the Bee Diseases Legislation Committee is overwhelmingly against doing away with fixed comb skeps. —I. HOPKINS, Auckland, New Zealand.

"ISLE OF WIGHT" DISEASE.

[8439] I have more than once been on the point of giving you my experience of "Isle of Wight" disease, but have been deterred from doing so by the knowledge that the subject has been so much to the front lately, and I fear your readers must be weary of the name. However, nothing will be gained by shutting one's eyes to the fact that the disease is still with us, so I will risk their wrath.

Your readers will doubtless remember my letter to the *Daily Mail* on "Coddled Bees," which was re-printed in the "B.B.J." (Sept 29th, 1910, page 387), in which I proved that bees living under natural conditions were stronger and healthier than those in modern hives, and I gave what I believed to be the reason.

In the autumn of 1910 the twenty-three stocks at my apiary at Bures, Suffolk, were packed down for winter with not less than 30lb. of stores. Over the frames I placed one layer of unbleached calico with an excluder on top to keep it level. The calico was not used as a quilt in the strict sense of the word, *i.e.*, a warm cover, but merely to keep the bees down. Entrances were left open full width, and I felt quite easy in my mind that the bees were living under conditions very similar to wild ones.

About the third week in January I paid a flying visit to see if all was right, and being favoured with an exceptionally warm day with bright sunshine was able to open the hives and peep between the frames.

To my great surprise I found that in twenty hives there was sealed brood in not less than four frames, some had brood in six frames, and I looked forward to some early swarms.

I did not go near the apiary again until Easter, when I found the bees in first-class condition and the outlook was very promising.

On Easter Monday my attention was drawn to a hive containing bees I had removed from a tree the previous year and hived on drawn-out comb, which was the most forward of all my stocks. About a dozen bees were crawling about the grass a few inches from the alighting-board, apparently unable to fly. I watched them for about half-an-hour, by which time they had managed to regain their hive; at first I thought they were water-carriers overloaded, but not feeling quite satisfied I decided to run no risk and promptly dispatched the hive to London, and placed it in my garden there where I could keep the bees under observation.

Nothing happened to excite my suspicion for a week, when I noticed hundreds of bees crawling about the ground, and in ten days the stock had dwindled down to about four frames. I knew then they had the dreaded "Isle of Wight" disease. My first intention was to destroy the lot, but knowing that there were no apiaries near me I decided to experiment.

I removed the quilt, and in its place put perforated zinc, pushed the hive back on its floor-board so as to give ventilation back and front, and waited results. At once I noticed that fanning at the entrance, which before had been continuous, ceased, and for the next few days there was a marked improvement. I then decided to see if bees reared under the fresh-air treatment showed signs of the disease, and cut out all combs, leaving 2in. along the top bars as starters.

To cut a long story short, in six weeks the bees were strong on eight frames and showed no signs of disease, and I took them back to Bures, where they filled a rack of sections.

I then began to congratulate myself I had discovered a fresh-air cure for the "Isle of Wight" disease.

About the third week in September I made an inspection of all my hives and found they were well provided with stores, in fact I do not remember seeing such a quantity of first-class honey in the brood-nest.

The last week in October I again visited Bures to finally close down the hives for the winter. Judge of my amazement when I found only three alive. The disease had swept through the apiary like a tidal wave. I stood dumbfounded and could hardly believe my own eyes. Instantly my thoughts returned to my pet theory that, "If we outrage Nature we shall suffer for it." In what way had I offended Nature? That she was displeased was clear, but why? Many of my stocks which had survived in trees and house tops, according to the traditions of the villagers for half a century, were completely annihilated after a short existence in modern hives.

I drew comparisons between their mode of living in their wild state and under my treatment, but could not account for such a disaster. So I gave it up and turned my attention to the survivors to see if I could explain why they were still alive. So I noted their numbers—7, 14, and 23, and turned up my record book, and this is what I found: "No. 7 hived on starters, No. 14, ditto, No. 23 was the stock I had cured of 'Isle of Wight' disease, and which had also built their combs from starters." Then I began to see daylight. This is where I had offended Nature. I saw it all.

Bees in their wild state build as much comb as they desire, whereas I had hived most of my stocks on full sheets of foundation, many with drawn-out combs. Under natural conditions bees must first build comb before they can store honey, in our modern hives they use the same combs year after year and use but a small quantity of wax for cappings.

It has occurred to me that there is some connection between the "Isle of Wight" disease and the swarming impulse; if so, this would explain why the strongest hives die first. Weak stocks, from which we do not get swarms, frequently escape the disease. Some bee-keepers are of opinion that bees secrete wax voluntarily, but I do not agree with them. When bees are

strong the temperature inside the hive is high, and the higher the temperature the more the inclination to swarm. We all know that at times bees are seized with the swarming fever and will throw off casts frequently to the great detriment of the parent stocks, but I do not think they do this voluntarily; they are loaded with wax which they can only dispose of by deserting the old combs and building new ones.

Ask a farmer what is the result if any of his stock lose their young at birth, and he will tell you that milk trouble results, frequently causing death to the mother.

Is it not possible that bees suffer to a certain extent through not being allowed to build combs before storing honey, and this may indirectly cause the stoppage in the colon? By our methods of extracting honey, the bees gather honey out of all proportion to the wax they secrete, whereas if each year they had to build combs before storing honey, the proportion of comb to honey would be more evenly balanced and approximately the same each year.

I now think that the stock I saved last springs owes its salvation to the comb-building, and not so much to the fresh air as I first thought.

This year I intend to do all I can to encourage early swarms—*i.e.*, will not super until they have swarmed. I will then hive the swarm on starters, place supers over queen excluders, and watch results.—J. C. Bee Mason.

A GOOD REPORT.

[8440] Having just finished my spring tour in this fertile Vale of Evesham, I send a few notes on the condition in which I found the bees. Everything is looking promising and bees are very busy among the fruit blossom. The first swarm reported came off on 20th April. Several hives have their second super on, and stocks have come through the winter better than I ever remember before, strong in bees and in health. Where the queen was young they took possession of the extracting frames for breeding first week in April. Personally, I leave the shallow frames in the brood nest all the winter, and never find any difficulty through the bees refusing to go into the super. There seems a great deal less foul brood about, too, and everything looks promising for another grand harvest of honey.—W. S. Woolley, Expert to Worcestershire B.K.A.

LEGISLATION FOR BEE DISEASES.

[8441] Legislation for bee diseases has no doubt now become a necessity, and I think the proposed Bill will meet with general approval. I am inclined to think, however, that skeps should be done away with gradually—say, in three years; they are mostly kept by persons who do not know what disease is, and many of them are careless in many ways. Skeps are very troublesome to examine, and if diseased cannot properly be disinfected. "Isle of Wight" disease in this country should make any opposition to the Bill unthinkable. Dr. Malden has mentioned Cornwall as being infected throughout by "I.O.W." disease, but I have not seen or heard of any bees suffering from this disease in this district.—A. E.J. (Mid Cornwall).

RANDOM JOTTINGS.

By Chas. H Heap, Reading

April, with her smiles and tears, is over, and happily the smiles have, so far, outnumbered the tears. Where fell disease has not done its worst, the hives in orchard and garden are once more a source of attraction, luring us from the pleasures of our books and those other occupations that have helped to beguile away so many of the long winter hours. What a joy it is to behold the pears and plums in their bridal robes of purest white and to see the bees assisting so whole heartedly in the nuptials, humming the while their merry music! Equally joyous it is to watch our little favourites hurrying home with their share of good things from the wedding feasts. These fresh new provisions are delicious morsels, and are doubly welcome as the spaces in the larder are becoming barer and barer, and there are many more mouths to fill than there were a month ago.

An Early Wedding Flight.—With the rapidly expanding blossoms, orchards will soon be enormous clouds of white and pink, and bee-keepers will be looking forward to the glad excitement of the swarming season. The drone has made his appearance, and on March 28th I saw a virgin queen return to one of my hives after taking a wedding flight. I was not surprised, because the mother of the hive had died earlier in the month and was cast out in accordance with the laws of the hive. She had not been successful in her quest. April 3rd was beautifully fine and warm, and again I found that she had been abroad, but with no better result. The previous day, April 2nd, was calm and sunny, and while at an out-apiary the drowsy hum of a drone struck my ear, and, looking round, I saw a lively young fellow descend to the alighting-board and run into the hive. What a pity that six miles separated this precocious couple!

A Gloomy Note.—Unfortunately the shadow of disease diminishes the brightness with which many have usually anticipated the opening of the season. In many parts of the country not a bee remains in what last summer were pros-

perous apiaries, while complete extermination in others is only a work of time. In the Windsor district of Berkshire very few bees remain, and in other parts of the county the losses are considerable. As a consequence, the committee of the Berkshire Bee-keepers' Association have passed a resolution, which will be promulgated in due course, expressing the opinion that it is inadvisable for bee-keepers who have lost their bees to re-stock their hives for the present. This is a course that other associations might follow with advantage to their members, who naturally look for guidance in times like these. Re-stocking in districts where "Isle of Wight" disease exists can have, in the light of our present limited knowledge, no other effect than that of prolonging the epidemic. It is, of course, exceedingly hard for those who have become fond of the busy bees to see the hives tenantless and to have to lay veil and smoker aside. To do anything else will, however, only end in disappointment and loss. When large infected areas have been cleared, operations may be cautiously resumed.

Compulsory Inspection.—In all probability with the legislation we are promised by the President of the Board of Agriculture, the clearing of infected areas will be hastened. The details of this Bill will be awaited with interest by bee-keepers all over the country. Judging from Mr. Runciman's reply to Mr. W. A. Mount, in the House of Commons, he will produce a Bill of his own, but we may be sure that it will embody the essential points which the Diseases Committee of the British Bee-keepers' Association made in their suggested measure. One thing is certain: it will include compulsory inspection of apiaries. Both old and recent correspondence in the JOURNAL indicates that this will be extremely unwelcome to a section of bee-keepers. I am sorry that Mr. William Woodley still declares himself to be one of the objectors. Mr. Woodley has been so long an honoured member of the craft that all of us give more than a passing thought to anything he says; but on the subject of inspection I cannot follow him all the way. No one will deny that experts may become carriers of disease, and in the past, when the propagation of disease was less understood than it is to-day among the laity, disease might now and then have been carried from apiary to apiary. There is no excuse for carelessness now. With compulsory inspection a greater sense of responsibility will, no doubt, be felt by experts who go on tour. If it is not, the remedy rests with bee-keepers themselves. Precise instructions will most likely be issued to inspectors, and any improper conduct on an inspector's part must be promptly reported. That will soon put an end to any danger of diseases being spread through the agency of inspectors. In this respect county associations may be of great service to their members.

Queries and Replies.

[8313] *Bees in Nyasaland.*—I should be much obliged if you would tell me in your much appreciated paper: (1) What is the objection to having the top bars of frames 1¼in. broad, and near each end on opposite sides tin-tacks protruding ⅜ in., which will make the spacing of centres of combs 1⅞ in. as regulation, leaving a space between the frames on top of just enough width to let the workers through and keep queen and drones down, thus making the excluder-sheet unnecessary? (2) A strange swarm clustered on a tree near my apiary, then started killing a large number among themselves, including their queen, which I found among the dead underneath the tree; they then peaceably walked into a very small, occupied nucleus hive of mine, and made a good stock of them. What is the explanation of this strange conduct? (3) Has the Nyasa bee, its life and conduct, been described, and by whom? If not, would somebody appreciate an extract of my notes on same, and who?—L.W.J.D., Nyasaland.

REPLY.—(1) The spacing could not be carried out accurately enough to ensure success. (2) This is evidently a peculiarity of the bees in your country, as we have never heard of this occurring before. (3) Not that we are aware of; we do not know of any journal that would appreciate it except ourselves, and we do not pay for contributions. We, of course, should be pleased to have your account on these conditions.

[8314] *Transferring from Skep to Frame-hive.*—Might I ask you a question through the "B.B.J.," which I take in every week? I have a hive of bees which I have transferred into a frame-hive from a skep. I have five more which I am transferring in the same way, and they are all strong and doing well, judging by outside appearances. They have only been on eleven days, so it is not time for the skeps to be removed, as the "Guide Book" says the process will take three weeks. When I cut away the skep from the frames in the first-mentioned hive I found when turning it up that I had broken two of the combs which were stuck to the bottom. Being a novice I was in a fix, not knowing what to do, but I put the skep back as best I could, and now I find the bees bringing out young bees that are unable to fly; they are fully developed in all other respects. Is this caused through breaking the combs? I

first intended to take out the combs, but they were almost full of brood, so I left them to chance.—A. P., Petworth, Sussex.

REPLY.—There is no doubt that some of the young bees in the cells were injured through the comb breaking when you took up the skep. Leave them as they are, and all will be well.

Subscribers are always welcome to the information we give them gratis: it is one of their privileges to ask us questions. The more they ask the better we are pleased.

[8315] *Super Foundation.*—I send two samples of super foundation from different makers, both sold to me as "thin super" and guaranteed "Weed," but they are so much unlike in every particular that I should like your opinion in next issue of "B.B.J." Bees are very strong, and look healthy: all are in clean hives. Yesterday I put sections on three stocks—there is so much fruit-bloom about here.—JOHN CHAMPION.

REPLY.—The sample marked No. 2 is thin super foundation made by the "Weed" process. No. 1 is certainly not thin super, and we do not think it is made by the same process. No. 2 is the one you should buy.

[8316] *Preparing for Swarms.*—Anticipating a swarm in May or June, I should be glad of your advice on the following: I already possess an empty frame-hive and know how to hive the bees, but would it be best to have foundation for the fresh bees to work upon, and to provide them with food to commence with, or will they provide their own food?—A BEGINNER, Ilford.

REPLY.—All the frames should be fitted with full sheets of foundation which should be wired. After hiving, the swarm should be fed for at least a week.

[8317] *Using Old Foundation.*—I have some standard frames fitted with foundation and a rack of sections with starters left over from last year. I understand that being stale the bees will not readily take to the frames and work them out unless the foundation is freshened up. Can you please say how it should be treated in order to induce the bees to work the frames out quickly?—W. P. L., Norwich.

REPLY. — The foundation can be freshened by warming it in front of the fire. Take each frame or section separately and pass it quickly backwards and forwards about 8in. from the front of the fire. The movement will prevent the wax melting, and will distribute the heat evenly over its surface.

[8318] *Bees and Neighbours.*—(1) I have two colonies of bees, and in the case of a swarm issuing and settling in my neighbour's garden (who has no bees), and so long as I keep them in sight am I justified in entering his garden to hive the swarm? If, however, he forbids me and I insist on taking my property, can he sue me for trespass? (2) If I set up bushes in my garden, do you think that would induce the swarming bees to settle on them?—T. F., Hungerford.

REPLY.—(1) Yes, you can claim the swarm, and if the neighbour refuses to let you fetch it you can sue him for its value in the County Court. (2) If there are bushes, the bees are more likely to settle on them than go away.

FRUIT.

FURTHER OBSERVATIONS AND EXPERIMENTS ARE WANTED IN REFERENCE TO THE POLLENATION OF OUR HARDY FRUITS.

Will any fruit-growers or botanists help in making observations on the following points:—

(1) Note the order of blossoming of the best market varieties of cherries, including Early Rivers, Waterloo, Knight's Early Black, Black Eagle, Frogmore Early Bigarreau, Bigarreau or Amber, Old Black Heart, Kentish Bigarreau, Florence, Napoleon and Turk.

(2) Is the following approximately the order of flowering of the following plums: *Early*—Grand Duke, Monarch, Old Greengage, Black Diamond, Cox's Emperor, Cheshire Damon; *mid flowering*—Bradley's King of Damsons, Victoria, Coe's Golden Drop, Jefferson Prince Englebert; *late flowering*—River's Early Prolific, Sultan, Czar, Oullin's Golden Gage, Pond's Seedling, Pershore.

(3) Is the following approximately the order of flowering of pears?—*Early flowering*—Beurré Clairgeau, Duchesse d'Angoulême, Beurré Diel, Marguerite Marrillat, Jargonelle, Williams' Bon Chrêtien; *mid-flowering*—Beurré Hardy, Doyenné Boussock, Beurré Giffard, Catillac, Pitmaston Duchess, Dr. Jules Guyot; *late flowering*—Clapp's Favourite, Triomph de Vienne, Souvenir du Congrès, Doyenné du Comice, Marie Louise d'Uccle, Durondeau.

(4) Is the following the approximate order of flowering of the commoner market apples? — *Early flowering* — Bismarck, Golden Spire, Baumann's Red Winter Reinette, Stirling Castle, Bramley; *mid flowering*—Duchess's Favourite, Gladstone, Cox's Orange Pippin, Beauty of Bath, Worcester Pearmain, Lane's Prince Albert, King of the Pippins; *late flowering*—Gascoigne's Scarlet, Wellington, Blenheim Orange, Royal Jubilee.

(5) What other varieties of pear are self-fertile beside Conference, Durondeau, Duchesse d'Angoulême, Colmar d'été?

(6) What other kinds of apples are self-fertile beside Stirling Castle, Lord Grosvenor, Early Victoria, Gladstone, King of the Pippins, Lord Derby, Irish Peach, White Transparent, Newton Wonder, Ecklinville Seedling, Summer Golden Pippin, Baumann's Red Winter Reinette, Peasgood's Nonsuch and Christmas Pearmain?

(7) Note.—Professor W. O. Backhouse finds the following plums self-fertile:—Victoria, Prince Englebert, Czar, Pershore, Yellow Magnum Bonum, Denniston's Superb, Early Transparent, Reine Claude Violet, but that River's Early Prolific is nearly self-sterile.

(8) Are any cherries self-fertile beside the Morello?

(9) Note insects seen visiting blossoms of plum, pear, apple, cherry, so as to record roughly the proportion of hive bees, bumble bees, other wild bees, thrips, midges, beetles, ants, &c.; also those visiting gooseberry, red and black currants, strawberry, raspberry, and loganberry. Kindly send reports in June or July to "The Secretary, National Fruit Growers' Federation," 2, Gray's Inn Place, Gray's Inn, London, W.C.—C. H. Hooper.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13 July.**

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Cambridge Mammoth Show, 1912.—Sections for Horticulture, Bees and Honey. Schedules of prizes for the above Sections are now ready, and can be obtained of the Sectional Secretary, as under. Schedules will be sent to all 1911 Exhibitors, who need not apply. Free spaces offered in Horticultural Section to Growers for Trade Runs. E. F. Dant, Sectional Hon. Sec., 17, Sussex-street, Cambridge.

WEATHER REPORTS.

Barnwood, Gloucester,
March, 1912.

Rainfall, 4·04in. in 24 days.	Sky completely overcast on 16 days at 9 a.m. Cloudless on 0.
Above average, 2·52 in.	Percentage of cloud, 76.
Heaviest fall, ·79in. on 4th.	Prevailing winds, S.W. and N.W.
Total to date, 10·07in.	Percentage of wind force, 34.
Above average, 5·23 in.	Barometer, daily mean, 29·71; highest, 30·33 on 12th; lowest, 28·84 on 21st.
Mean maximum temperature, 51·8; 3·8 above average.	Remarks.—A month of somewbat unpleasant weather; damp, milder than normal, and deficiency of sunshine. Bees flying more or less on every day.
Warmest day, 28th, ·60	
Mean minimum temperature, 40·4.	
Coldest night, 22nd, ·33.	
Mean temperature, 46·1; 3·6 above average.	
Relative humidity, 82 per cent.	

F. H. Fowler (F. R. Met. Soc.).

Notices to Correspondents.

W. T. H. W. (South Africa).—*South African Bees wax.*—We are delighted to receive a communication from an old subscriber in such a distant colony, but our paper is "British" and is sent to readers in almost every country in the world. We wish you long life to read its news, and hope to hear again from you. Both samples of wax are very good, the lighter one being the better of the two.

J. S. R. (York).—*Moving Bees.*—It will be well to move the "stock" hive from five to ten yards away.

H. Gray, M.R.C.V.S. (London).—*Scientific Works on Bee-Diseases.*—The best works on the above subject are by Dr. Zander of Erlanger, Germany, also papers by Drs. Maassen and Burri. They have not been translated into English, but we can give the titles and other particulars if desired. The most complete descriptions are given in the latest edition of the British Bee-Keeper's Guide Book, but Dr. Zander's work is the only one that scientifically treats of *all* bee-diseases, that is, up-to-date.

E. H. P. (Cheshunt).—*Early Drones, and other Queries.*—(1) Drones are numerous now in some districts. (2) and (3) The drones are young ones and have been cast out because they are malformed, the wings not being properly developed (4) Take the section rack off in the

ordinary way, clearing out the bees by means of a "Porter" bee-escape. (5) Honey is a good sample from white clover, though a little thin.

E. C. S. (Yorks.).—*Elongated Cells.*—This is caused by the queen being a drone breeder. She is useless, and should be replaced. We have had good reports of the "Ayles" cure, and you would be wise to use it as a preventive, even though your bees are healthy.

G. DAVIES (Peterborough).—*Death of Queen.*—(1) The bee sent is the queen which (2) has been crushed in some way, probably when you were manipulating the frames. (3) This can only be ascertained by an examination. Examine the combs, and if you find queen-cells being built you will know there is not a queen. (4) The other bees sent have died of old age; the young bees have died of starvation.

Suspected Disease.

H. J. P. (Colchester).—A bad case of chilled brood.

STEVENS (Endicott).—The bees have died through being chilled.

R. M. (Clifton).—The bees are apparently suffering from "Isle of Wight" disease.

E. R. F. (Maidstone).—Comb contains nothing worse than mouldy pollen. This is caused by damp.

J. C. (Chorlton).—It is a case of sour brood.

D. B. (Ormskirk).—In the case of "Isle of Wight" disease, there is no sign of it in the brood, which may be quite healthy. The adult bees only appear to be affected. The comb you send has nothing worse in the cells than dry pollen.

Honey Samples.

W. J. S. (Cornwall).—The honey is mainly from clover, is good in colour and flavour, but lacks density, and the latter fault would go against it on the show bench. It ought to fetch 1s. per jar retail, 10s. per doz. and 56s. to 60s. per cwt. in bulk.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½ *in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

FEW specially fine Swarms, 3s. 6d. lb., till May 21st, guaranteed absolutely free all disease, I.O.W. unknown in county; genuine Simmins double Conqueror, unused, £3 10s., cost £5.—A. M., c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C. u 76

FOR SALE, 3 stocks of good strong healthy Bees, in skeps; also 3 Swarms from same, out April 20th; offer.—Apply, W. G. MARTIN, Lenchwick, near Evesham, Worcestershire. u 62

7 STRONG STOCKS, guaranteed healthy blacks, in good Standard Hives, fitted with wired frames, excluders, crates, and lifts, headed by young prolific queens, the result of 15 years breeding by selection, first reasonable offer accepted; must be removed within 10 days.—A. E. YOUNG, Hartburn, Stockton-on-Tees. u 63

BEES.—Few excellent Stocks, on 8 Standard frames, hardy, and perfectly healthy, 30s. each, travelling boxes free, cash or deposit.—JOSEPH DRAPER, Saw Mills, Aughton, Ormskirk, Lancs. u 65

TWO 28lb. tins new granulated Honey, 5d. lb.—A. W. RUSSELL, Penton, Andover, Hants. u 64

A FEW NATURAL SWARMS, May, 3s.; June, 2s. 6d. per lb, free from disease, free package, and on rail.—E. MARSHMAN, Little Linford, Wolverton. u 67

CHESHIRE; no Isle of Wight disease in this county, no disease of any kind in my apiary; strong Stocks for sale, blacks and hybrid Carniolans, on good combs, plenty stores, 8 frame, £1; 9 frame, 22s. 6d.; can supply Hives, price according to quality; inspection invited.—H. BROOK, grocer, Bowdon, Cheshire. u 69

5 SINGLE and 3 double stock Hives, all clean and double walled, Cowan pattern, 5s. and 8s. 6d. respectively.—F. WILLSON, The Beehives, New Haw, Addlestone. u 71

½CWT. last season's Honey, guaranteed pure, in tins, 6d. a lb.—DAVIES, Gelly, Llanwrda, S. Wales. u 72

HONEY RIPENER, Extractor, knife warmer, healthy drawn out brood and shallow combs for sale.—Offers to WM. THOMPSON, 43, Jacobs-well-lane, Wakefield. u 73

BUFF ROCK COCKEREL, value 12s.; Harmsworth Encyclopædia, unbound; exchange, together or separately, for Bees.—WILSON, Apiary, Belper. u 74

FOR SALE, few strong Stocks, guaranteed healthy, 8 frames, 35s. each.—CLARKE, Pollard's Hill, Norbury, S.W. u 12

EXHIBITORS! Lee's Observatory Hive, new, 18s., an absolute bargain.—IVE, Boughton, Newark. u 77

TWO Standard Frame Hives, with extra lifts and section racks, 7s. 6d. each, on rail; orders booked for good May and June Swarms.—A. GREEN, Tangley, Andover. u 78

1 DOZ. Standard Frame Hives, by Lee, nearly new, 6s. 6d., complete; or exchange good sections; Extractor, by Meadows, 14s. 6d.—W. A. WOODS, Normanby, Guildford. u 83

GOOD LIGHT HONEY, granulated, 28lb. tins, 50s. per cwt.; sample, 2d.—DEAN, Bower Vale, Epping. u 86

SWARMS from frame Hives, May to June, 12s., 14s.; boxes, 1s. extra, or returned carriage paid.—J. REAVELEY, Starbeck, Harrogate. u 85

FOR SALE, two Stocks of Bees, in modern frame Hives, guaranteed healthy, 27s. 6d. each; particulars.—IRVING, Galabank Apiary, Annan. u 82

LIGHT LINCOLNSHIRE HONEY, 28lb. tins, 14s. each; sample, 2d.—WILLIAM ABBOTT, Thorpe Bank, Wainfleet. u 81

ADVERTISER requires Position in Apiary or Bee Farm, thoroughly acquainted with up-to-date methods of bee culture. Or Post to instruct in bee-keeping, also incubating and rearing of chickens.—DICKINSON, The Homestead, St. Ives, Ringwood.

Editorial, Notices, &c.

IRISH BEE-KEEPERS' ASSOCIATION.

The annual report of I.B.K.A. is before us, and we must confess to a feeling of regret to find the association in such an unsatisfactory condition. It was in the autumn of 1880 that the B.B.K.A. sent two of its representatives to travel through Ireland for the purpose of giving instruction in modern methods of bee-keeping, and this led to the formation of the Irish Bee-keepers' Association on April 21st, 1881, which adopted the rules of the B.B.K.A. and for many years did excellent work, being well supported by subscribers. From 1887, Mr. H. Chenevix, J.P., was hon. secretary and treasurer, and continued for thirteen years as the leading spirit of the I.B.K.A., and it was largely due to his energy and influence that it prospered and that the number of subscribers in 1897 reached 334. It was also through his influence that the Congested Districts Board was first induced to make a grant towards bee-keeping in the districts under its care. The resignation of Mr. Chenevix was a severe blow to the association, from which it has never recovered. After Mr. Chenevix resigned, although there was a great falling away of subscribers, there were still 178 in 1901. Since then the association has not been well supported, for we find that in 1908 the subscribers had dropped down to forty-four, with a further drop to forty-one in 1910. There is a slight improvement in 1911, and we are told that "The number of subscribing members has increased by over 33 per cent." This looks very imposing on paper and such an increase would be important if the percentage were taken on a large list, but when we find the total number of subscribers to be fifty-eight, the actual increase is only seventeen for the year, which shows the utter sham such a statement is intended to be. Moreover, fourteen of these are experts who are only recognised as such if they have paid their subscription for the year. For a once flourishing and well-managed association to dwindle down to only fifty-eight subscribers is indeed sad, and shows that there is something radically wrong. The subscriptions which amounted to over £30 in 1901 fell in 1910 to £8 4s., and although they have increased to £16 15s. they are a long way from what they ought to be for an association which should occupy a leading position in Ireland. For some years the I.B.K.A. has received a grant from the Department of Agriculture and Technical Instruction, for demonstrations and organising associations, and yet we find in the report a complaint is made that a grant from the Development Fund had been refused owing to the smallness of the subscription list, and an appeal is made to local associations for support "in a renewed attempt to obtain proportional treatment with England in this matter." With the grant from the D.A.T.I., the I.B.K.A. has already been having more favourable treatment, which we have not grudged them, but directly British bee-keepers are—although tardily—recognised by Government the Irish are jealous, and ask for "proportional treatment," although for years they have already been receiving grants out of all proportion to their subscriptions. It is probably this spoon-feeding and want of self-reliance that is at the bottom of all the trouble. It also looks very imposing on paper to read of twenty-nine affiliated associations, but disappointing to find the insignificance in membership. We miss the names of the larger associations of ten years ago, and find only one, namely, Wexford Co. Association which has a membership of 216. The next largest is Wexford South Co., with sixty-eight members; three under this number and over fifty; three others are quite small and only have twelve, thirteen, and fourteen members respectively. There does not seem to be any restriction as to lowest number of members to qualify for affiliation, as is the case with the B.B.K.A. which only admits associations into affiliation whose membership is over thirty. Excluding Wexford Co. Association, the lot are hardly equivalent to some of our large County Associations.

Although the Bee-Pest Prevention (Ireland) Act has been in existence for four years, not a word as to its working is found in the report, and from what we can gather from correspondents in Ireland, it seems to be a dead letter. Nor do we find any allusion to the Insurance Scheme, which, by the way, is a private speculation run for private gain, and from which the I.B.K.A. does not derive a benefit similar to that enjoyed by the B.B.K.A., with its Insurance Scheme. We do not remember seeing any return of compensation paid to any claimant under the Irish scheme, nor of the number of insurers or hives insured, and suppose these must be too trifling to mention. On the whole, the report is a disappointing one, as it shows no progress, but gradual decadence.

WARWICKSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of the Warwickshire Bee-keepers' Association was held on April 18th at the Imperial Hotel, Birmingham, Major Everitt presiding.

The annual report showed that the past honey season had been good in most parts of Warwickshire. The income for the

year amounted to £126, and the expenditure to £148, leaving a deficiency on the year's working of £22. The demand for the association's honey labels had increased, and 6,700 had been issued during the past season.

Proposing the adoption of the report and statement of accounts, the Chairman referred to the good that bees do in the matter of fertilisation. Bee-keeping was a pleasant and interesting hobby, and money could be made by it. He was told that as much as £50,000 a year went out of this country for the purchase of honey. He was sure they all hoped that bee-keeping would become more popular, and that much of that amount would be saved to the country.

The motion was seconded and agreed to. The Earl of Craven was elected president of the Association, and Mr. J. Noble Bower was re-elected honorary secretary. Afterwards a lecture on "Modern Bee-keeping—A Profitable Industry," was delivered by Mr. George Franklin. The lecture was illustrated by interesting lantern pictures.

LEICESTERSHIRE AND RUTLAND B.K.A.

The annual meeting of the Leicestershire and Rutland Bee-keepers' Association was held at the Highcross Coffee House on Saturday, March 30th; Mr. A. E. Biggs presiding.

The thirtieth report and balance-sheet were adopted.

A vote of thanks to the retiring officers was passed on the proposition of Mr. Roper, seconded by Mr. Riley.

The election of officers resulted as follows:—President, Lady Maurice Levy; chairman, Mr. A. E. Biggs; vice-chairman, Mr. Riley; council, Messrs. S. Clarke, Wright, G. W. Dunn, Earp, C. Halford, J. Hayward, E. A. Jesson, G. J. Levers, A. J. Marriott, A. Spencer, J. Thompson, W. H. Wood, and T. H. Wright; hon. treasurer, Mr. W. K. Bedingfield; hon. auditor, Mr. E. J. Underwood; hon. secretary, Mr. John Waterfield; representatives to meetings of B.B.K.A. in London, Messrs. Falkner and Waterfield.

Prizes were awarded to: 1st, Mr. H. Burdett; 2nd, Mr. Gamble; 3rd, Mr. J. G. Payne, for the best single 1lb. bottle of granulated honey, and to: 1st, Mr. J. Waterfield; 2nd, W. Perkins; 3rd, W. W. Falkner for the best single 1lb. bottle of liquid honey.

In the evening Mr. G. O. Nicholson explained the proposed legislative powers to deal with foul brood and other bee diseases. Mr. W. Herrod, Secretary of the B.B.K.A., then gave a very lucid explanation of the Bill as at present drafted, which appeared to meet with the approval of the majority of members present. Mr. W. K. Bedingfield followed with a lantern lecture on "Bee Diseases and Parasites."—J. Waterfield, Hon. Sec.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

(*Continued from page* 156).

Disinfection.—We will now consider disinfection where disease has been present. To be effectual this must be carried out in a systematic and thorough manner. In the first place, everything movable inside the hives to be treated should be burnt. It is false economy to try and save the frames, as these are so cheap that to disinfect them is an absolute waste of time. Quilts also can be obtained cheaply, and although apparently clean, those that have been upon affected stocks should be burnt. I would even go so far as to burn the division board, as a new one can be made quicker than disinfection of the old one carried out.

A hive that has contained diseased bees and is at all dilapidated should be chopped up for firewood and replaced by a new one, it is impossible to disinfect decaying wood.

The best method of disinfecting the hive is by means of a painter's blow-lamp. Fire will destroy all germs, and at the same time cleanse the hive from propolis, while it also will destroy the eggs of wax moth if these are present. Start systematically with the floor-board, then the brood-chamber inside and out, afterwards going lightly over the inside of the lifts. Care must be taken in using the lamp, or holes will be burnt through the wood. The woodwork should not be blackened, but be browned like toast. The surface must be carefully gone over, particular attention being paid to the corners. Some bee-keepers complain that they cannot get into the corners with the flame of the lamp without burning the wood a little distance out too much. If the portion of the hive being treated and the lamp are held in the position shown in the illustration the point of the flame will go right into the corner without damage to the outlying surface. A painter's blow-lamp is rather an expensive article to purchase; if this cannot be afforded or one borrowed, then another method may be adopted. Paint the inside of the hive with petrol, benzoline, paraffin, or other inflammable liquid, and set fire to it. Have ready a damp sack; when scorched sufficiently extinguish the fire by putting the sack over it. The drawback to this method is that there is no control of the flame as there is with the blow-lamp.

Another method of disinfection is by boiling, but this presents difficulties, as few bee-keepers have a receptacle large enough to contain a hive. In cases of foul brood scorching is all that is necessary, but where "Isle of Wight" disease is present the hive should be treated with "Ayles'" Isle of Wight cure.

The ground upon which the hives stand should also receive attention. If possible new ground should be chosen. Should the space at our disposal be so limited as to prevent this, and the hives have stood upon grass, petrol should be syringed all over it and set alight, afterward sprinkling chloride of lime or unslacked lime thickly over the burnt surface. If the ground has been dug, then put down unslacked lime. Trench it to the depth of twelve inches, putting the top soil in the bottom of the trench. When the trenching is complete sprinkle chloride of lime on the surface. Repeat the latter several times during the year, or by means of a sprayer give a dressing to the ground with a solution of carbolic acid.

DISINFECTING HIVE WITH A PAINTER'S BLOW-LAMP.

The racks and lifts should not be neglected, these should all be scorched with the blow-lamp. The combs should be fumigated with formaldehyde by stacking boxes containing them one above another over an empty one in which a dish containing formaldehyde and a little washing soda has been placed. The top frames should be covered with a non-porous covering. If an air-tight cupboard can be used in which the combs and formaldehyde can stand all the winter so much the better. Sections are so cheap that it is not worth while to save those uncompleted ones that have been on affected hives. These should be burnt. The dividers and excluders should be well washed in a strong solution of Fels Naptha soap, which will remove all the propolis. They should then be dipped in a strong solution of Formaldehyde.

The bee-house should also receive attention. It should be treated with limewash, to which carbolic acid has been added, or, in case of "Isle of Wight" disease, some Ayles' cure should be mixed with it.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"ISLE OF WIGHT" DISEASE.

NECESSITY FOR COMB-BUILDING.

[8442] While Mr. Bee Mason's harrowing experience (page 174) must call forth all the sympathy brother bee-keepers can show, to say nothing of the admiration with which we can look upon a man who does not sit down under adverse circumstances, but is "up and doing with a heart for any fate," I cannot help feeling that he shows some lack of ingennousness in putting forward his new theory as to the origin and cause of his troubles. It is, unfortunately, a very common failing of mankind to build up an elaborate theory upon one or two unsupported facts, but one would have thought the rude shattering of his fresh-air ideas would have awakened some caution in Mr. Mason before venturing to erect a fresh theory on such a solitary and singularly unsatisfactory incident.

I do not quarrel with Mr. Mason for holding this theory. What I want to call attention to is what appears to be an intentional omission of details, whereby his theory is given an appearance of stability which it may not possess in the slightest degree. He informs us that the three stocks which survived were hived on starters, but he does not tell us how the stocks which went under were commenced. If he can say that *each* of those were commenced on full sheets, his theory has some foundation, even if a slight one, but before he can expect others to accept it, he must give us this information—negative or affirmative.

In any case, I do not see that the method he proposes adopting is either

necessary or desirable. As I understand it, his contention is that the inability to get rid of wax has something to do with the inception or, at any rate, the propagation of the disease. Why, then, should he not provide each stock with room in which to do so? I believe myself that bees *do* wish to build comb at times; that, in fact, there are occasions when it is quite necessary for them to do so, and the plan I adopt is very simple, and can in any case do no harm. I work for sections only, and each rack is provided with foundation on an economical basis of my own invention, which anyone else is welcome to. I find the squares provided are a trifle too deep to fit comfortably into my sections, so I cut off half an inch from the bottom and use this half inch strip as a starter in another section. Thus I get one good section on a full sheet and another, not so well finished, of course, on a starter. This gives my bees plenty of scope for comb-building if they desire it, while it is a little saving to me.

While believing in fresh air and hygiene as strongly as anyone, I believe it is easy to become a crank on such matters. Mr. Mason has from time to time called attention to the length of time swarms inhabit trees and so forth, but might it not be true that far more runaways fail than otherwise. I found quite a good swarm located in a hollow tree in our forest, and I spent a great deal of time trying to get them out, but the position was absolutely impregnable in the summer, so I kept my eye on the place hoping in the spring to be able to get a swarm from them, as I believed the chamber was none too roomy, but when the spring came they had succumbed. The place was an ideal one from the point of view of dryness and general sanitation. When we consider that many swarms do escape, that they must frequently adopt homes of a more or less cramped nature, and consequently should throw early swarms from time to time, one would imagine there would be more about than there are, unless, as I suppose, many die out.

It is all very well to follow Nature. Civilised man has departed so far out of Nature's groove that there are many directions in which he could usefully take her as a guide, but it is, to my mind, making nothing short of a fetish of her to argue that so long as we follow her, we are bound to be all right. If Nature were perfect, there would be no need for strife and struggling, but we find on all hands this struggle for existence and the survival of the fittest going on. Constantly we hear of species becoming extinct, not through any breach of Nature's laws, but solely by the inevitable operation of them.

What we want to do is to try and apply our observations of Nature to practical uses by the aid of common-sense. There can be no doubt that the natural system of swarming is beneficial to the race of bees. Why? Because in process of time the old combs become dirty, insanitary, and last, but by no means least, with smaller cells. A swarm makes an entirely fresh start with large clean cells. We are, those of us who are greedy for honey, desirous of preventing swarming. What we have to do is to find a means by which we can ensure the colonies receiving the same benefits that result from swarming. It is very simple. My own practice is to put a new frame of foundation in the centre of every brood-nest each year—two in a very strong colony. I thus am certain that at any rate the first breeding in the new season will be in a new, clean comb. Automatically, my old combs come to the outside, where they are filled with honey, and if found to be very bad, I squeeze them and melt down the wax.

One other thing I do. I always keep my hives in the sunniest available spot. Shady corners, which used to be considered necessary in the old days, are the very places where fungi flourish in wet seasons, and how much harm is done by fungoid growths it would be hard to say.

Still one more item of practice. I invariably put each colony into a clean hive every season, commencing on the first fine day after crocuses bloom, when the temperature is above 50deg. The old hive I scrub out with hot water and disinfectant, and leave to air until the next colony is to be done.

These things appeal to me as common-sense proceedings justified by all-round hygienic experience. I do not claim that they are sufficient to keep away disease, although so far I have not suffered from any such trouble. I have no theory at all about "Isle of Wight" disease, and so far as I have followed the various reports I have come across nothing which seems to warrant any definite one being put forward.

So far as this season goes, we look like having a royal time. I have two racks full of cherry and apple honey, and other hives have each one in which hawthorn and chestnut nectar is going in truly glorious style. I wish that others may be having the same and more.—HERBERT MACE.

A LOCAL ASSOCIATION AND ITS WORK.

[8443] According to a report in the local Press, with much gusto and many vituperations against the British Bee-keepers' Association, and criticisms of its management, the Cambridge and District Bee-keepers' Association decided to withdraw from

affiliation "until that body was properly organised." As a bee-keeper and a resident within the boundary covered by that association, I strongly object to sixteen persons deciding for 240, which is stated to be the number of members in the report of the association. I am also a believer in co-operation. What can we as a puny body do without the assistance and help of the parent, and how, I should like to know, is the committee of this association going to replace the benefits now sacrificed by the unwarrantable action of a few?

Noticing these depreciatory remarks, and also that the C. and D.B.K.A. has been spoken of as "A flourishing and well-managed association," I determined to study the report and see how this bore out that statement, or whether it was only a case of "people who live in glass houses," &c. First on the cover I noticed the words (Non Political). Methinks I saw not long ago in a contemporary which champions the actions of the C. and D.B.K.A., an article on "Politics and Bee-keeping," in which it was stated that there was no connection. I leave the writer of that article to explain the action of his supporter, while making the suggestion that the addition of those words (which I cannot find in the report of any other association) are meant to be read in the negative sense instead of the positive.

A little lower down are the words, "In affiliation with the British Bee-keepers' Association." This, to say the least, is a false statement, as I see by the BRITISH BEE JOURNAL that the resignation of the C. and D.B.K.A. was accepted by the B.B.K.A. on July 20th, 1911; how then can this be said in 1912? It is curious that after maligning the parent body, this small association should be anxious to claim affiliation with it, although it had severed its connection several months before.

I next turned to the rules and find that the association officers shall be president, chairman, Executive Committee, hon. secretary and treasurer, and auditors, but upon diligent search I fail to find the name of the treasurer, but perhaps an adverse balance of £4 15s. 3d. explains this.

Again, upon perusing the rules, I find that vice presidents shall be subscribers of 10s. 6d., yet among the names of those printed as such, three paid nothing at all, one paid 7s. 6d., and six others paid only 5s.

The name of the hon. secretary appears on the cover, but evidently he is not a member of the association, for I cannot find his name in the list of members, nor is there any record of his having paid a subscription. Rule 7 says: "All subscriptions shall be payable in advance and shall become due on the first day of Jan. in each year, and until such subscription be paid no member shall be entitled to the privileges of the association."

Notwithstanding this rule, only last year, to my certain knowledge, the secretary took prizes at shows held by the association. How is this explained? It may be his modesty.

It is stated in the report that the membership has increased by 100, and that the present number is 240. I can only make it 193, including those who have not paid any subscription. I find blanks in the cash column opposite thirty-seven names, so really the subscribers number only 156. Last year the number was 142. The utmost increase then, is, even according to the figures in the report, only fourteen instead of 100 as stated. Perhaps the calculation was made by an Irishman. At any rate, to say the least, it is a "terminological inexactitude."

The resolution deciding upon severance from the parent body was, according to their own report, carried by a *sweeping* majority of sixteen out of 240, taking their own figures. So it is we 224 members who are deprived of all benefits from the parent association by a paltry sixteen, and even some of those had not paid their subscription for the past year, and according to the rules were not entitled to vote.

It would be interesting to know what the L.N.W. Railway has to do with bee-keeping, as it seems to figure largely in the report. Is the advertisement put in to make the report a little larger than it otherwise would be?

My advice to the committee of the C. and D.B.K.A. is to cease personal spite, fooling, and false reports, act as men holding public offices should do, i.e., for the benefit of the members, and "pluck the beam out of its own eye before seeking to remove the mote from its brother's" (in this case the parent association).

Until this is done the association cannot thrive, and this fact has been amply proved by the muddling methods of the late hon. secretary, and the action of the present one and his committee.—A WORKING WELLWISHER.

[We have had a good many complaints about the mismanagement of this association, but would point out that the matter rests entirely with the members, who can exercise their influence by electing efficient officers for conducting the business. The B.B.K.A. can in no way be affected by the spiteful remarks of interested persons, and we would mention that the severance of the connection was brought about by the hon. secretary refusing to comply with the rules of the Central Association, although his association had agreed to the conditions before its affiliation was accepted, also by his flouting the decision of the Council. The hon. secretary (Mr.

Skevington) was put on the Council some years ago, and at the annual meeting last year raised the question of the expenses of the apiary and postages, although he was a member of the Finance Committee and had checked and signed the accounts, and had presented their report at a number of council meetings. It was no wonder that when a ballot was taken for the new council that an overwhelming majority of votes were cast against his re-election, the members thus signifying their disgust with his behaviour. Never in the history of the association has so large a number of votes been cast in rejecting a member of the council.—Eds.]

TYPES OF BEE-KEEPERS.

"THE OLD."

[8444] He was a picturesque old man of some seventy winters, living in one of the West Midland Counties. Straight as a gun barrel, and tough as his old ash-plant, which he used little as an aid to walking, yet time had left its trace upon him in the silvered hair and gnarled and knotted hands, hard and rough with the labour of years amounting almost to the length of his life. He was but a country labourer, but by dint of hard work and much thrift he had risen to the dignity of occupying a small holding, devoted chiefly to the raising of fruit and vegetables for the early market.

The cottage in which he lived with his wife and daughter was a wondrous affair of one storey and seemed to be held together by ropes and chains lest the walls should finally decide upon a course which they seemed to have been contemplating for years—that of spreading themselves to the four points of the compass.

Whilst staying in that district I was induced to visit him through hearing that he was a bee-keeper of the old school—a skeppist upon whom modern methods had made no impression. I approached him upon the subject of bees, asking him by what methods he managed to take his honey from the row of a dozen skeps standing near his door. The old tale; the brimstone pit was the end of a summer of strenuous labour and his apiary was depleted of half its stocks to furnish him with honey of a very doubtful quality. I expressed a desire to drive the stocks which he intended to destroy, but was met with, "No zur; I loikes to be koind to my bees, I does; I loikes to know the end on 'em; I brimstones them off, I does." And no amount of persuasion, backed up by a liberal cash offer per hive, would persuade him to alter his mind.

He had a profound contempt for modern methods; no hives were so sound, so weather-proof or so healthy as his home-made straw-skeps. He had had most wonderful takes of honey from them in favourable seasons. He told with pride of one skep, which, when put on the scales, weighed sixty pounds. He had never had disease in his apiary and considered disease to be "all along of them new-fashioned hives." But the inner working of the hives was a mystery to him, and to have seen a queen was the sight of a life-time. "Yes, zur," he said, "I don't believe there's a man in England knows more about bees than I does." His father, grandfather, and possibly his ancestry back to the Flood had been bee-keepers, and he had a wonderful amount of bee-lore, a strange mixture of fact and fancy. We had a chat on swarms. To him "A swarm in May was worth a load of hay," and his best stock was the one which sent off the earliest and strongest swarm. A cast was acceptable. "Last year we had a hub, but a hub is not much good and seldom thrives." "A hub," I ventured to enquire, thus showing my profound ignorance of bee-life, "What is that?" "Well, you knows, zur, if you knows anything about bees, first there comes a swarm, then a cast, and then there may come a hub, wheel and spindle"—the first and only time I had ever heard those terms for the various orders of swarms and casts.

I parted from him with feelings of regret that the old bee-keeper with his antiquated methods, quaint bee-lore, and picturesque apiary was fast dying out, but with these feelings was mingled one of joy in the present and hope for the future of scientific and humane bee-farming.—D. WILSON.

EARLY QUEEN-MATING.

[8445] The well-thought-out article by Mr. Anderson in "B.B.J." of March 21st (page 117), in which he drew attention to the superior resisting powers of hybrids to the dreaded "Isle of Wight" disease suggested to me the idea of trying for a definite cross before normal stocks had drones flying. The discovery of a queenless stock in the apiary just prior to this provided the colony for experiment, and the following extracts from my diary will show the results:—

March 21st.—Examined "E" stock. No sign of queen or eggs, two frames of capped brood just hatching. Gave small frame larvæ to test for queenlessness.

March 22nd.—Split brood-nest of strong "Banat" (Hungarian) hybrids with frame of drone comb.

March 26th.—Queen cells being constructed in "E" stock. Destroyed these and gave frame eggs to keep them at work.

April 2nd.—Gave frame eggs from "Swarthmore Golden" stock to "E."

April 5th—15*th*.—Destroyed queen-cells as sealed on all but "S. Golden" frame.

April 17*th*.—Found fine golden virgin hatched.

April 21*st*.—Drones flying from "Banat" hive (apparently these were being bred *before* March 22nd).

April 24*th*.—Golden queen commenced laying.

I calculate this cross will give me bees of parentage as under:—$\frac{1}{2}$ Banat, $\frac{1}{4}$ Golden, $\frac{1}{4}$ Black.

Hitherto no cases of the "Isle of Wight" scourge have been reported in this neighbourhood. May we all do our level best to get stocks into the strongest condition for facing it if it does appear!—H. E. Scrope Viner, Westmancote, Tewkesbury.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

"*Isle of Wight*" *Disease* (p. 119).—The theory that the period of incubation or development is of some weeks' duration, which I take to be Mr. Anderson's suggestion, seems to me a valuable one, tending towards a greater care in diagnosis of freedom from disease. The suggestion that there may be an intermediate host would, however, appear contradictory of, or, at least, unnecessary to, this theory.

None of these suggestions help to explain the outbreak, its virulence, and infectious nature, and the apparent immunity of the queen. Incidentally, we should be glad to know whether the different races of bees have had the same care, or whether one has had preferential treatment. Most of the Northern outbreaks are directly traceable to importation from the South. Is it too much to ask of vendors that they should not send driven bees from an infected or adjacent district? Surely there is sufficient demand locally, in view of the wholesale destruction of the past year or two. Whether *Braula cœca* is innocent in the matter might be determined by its distribution, which is, I believe, limited in latitude. In this connection I note an interesting observation by Mr. A. C. Miller, that the *Braula* may be more guest than parasite, being actually fed by its host.

Legislation (p. 125).—In reply to J. Herrod, the wording he suggests for Clause V., Sec. 1 (*a*) is covered in Sec. 1 (*d*). His suggestion for Clause V. Sec. 1 (*c*) is opposed to the views of the committee, and might make extracted honey and rendered wax liable to destruction.

Hive Protection (p. 128).—I see that "D. M. M." suggests an evergreen subject as the most suitable material to protect the hive in winter, but he does not give instructions for its application. Some of these evergreen subjects are poisonous, and give off fumes of prussic acid and what not when bruised, so that——. Perhaps laurel wreaths hung about the champion hive would afford some protection.

Legislation (p. 136).—Mr. Samway's attitude towards the draft is a tribute to the care which the committee has expended upon it. He is quite correct in suggesting a difference between home and colonial conditions, a point with which I hope to deal later. The draft, as it stands, would empower an inspector to deal with skeps, whilst not making destruction compulsory. Reticence with regard to the discussion at the Board of Agriculture is no sign of want of confidence in the general body of bee-keepers on the part of the B.B.K.A. The frank way in which their findings have been published, and the welcoming of criticism shows their attitude. The proceedings at the recent conference were regarded as confidential by the expressed desire of the Board of Agriculture.

Experts' Association (p. 140).—This suggestion of "D. M. M.'s" may be worth consideration, and should not be allowed to drop into oblivion without discussion. Perhaps if he would outline the objects of such an association we might get forward. Is the suggestion in the nature of a miniature trade union? And may we expect the attainment of a "minimum"?

Formalin Solution (p. 156).—There is a clerical error here in stating four parts of commercial formaldehyde to one part of water. It should obviously read one part of formaldehyde to four parts of water. In any case these proportions give less than a 9 per cent. solution. One part to three-and-a-half parts of water is nearer a 10 per cent. solution.

Wintering with Supers on (p. 157).—As many beginners may suppose that section-racks are meant, it may be well to state that shallow frame supers alone may be left in position over the winter. Sections left thus are practically unsaleable afterwards.

Bees and the Eclipse (p. 168).—My own bees did not fly much during the phases, but were crowded upon the alighting-boards, observing the phenomenon through the smoked glasses which had been provided for the occasion by the owner's thoughtfulness.

"*Isle of Wight*" *Disease* (p. 168).—It is quite possible that this disease may not flourish in the North, and that a cure which is there possible may not be practicable in the South. I refer particularly to hive disinfection. This is merely a suggestion without definite data, but observation to confirm or confute may be valuable. If brood from a diseased colony may be given to healthy bees with

impunity, the theory that the disease is present in the brood, but develops slowly, cannot hold good.

BRIEF REPORTS.

I had a swarm on Sunday, April 21st, from a stock of hybrids. Wax moth is very troublesome. There are only a few hives left in this and neighbouring parishes. Everywhere the "Isle of Wight" disease is rampant.—R. H. R., Southampton.

Yesterday (May 2nd), at 10.30 a.m., without any warning, a hive of Italians swarmed (5½lb. full-weight). This must surely be amongst the earliest so far north.—R. M., Edgehill, Dundee.

Queries and Replies.

[8319]—*Bees and Nurserymen.*—I should be much obliged if you would assist me with advice as regards bees being an annoyance and causing damage to nurserymen's crops. In this locality, which is a district of glasshouses, the nurserymen claim the right to compel bee-keepers to get rid of their stocks, and I should like to know: is this possible; can they compel one to do so? An answer through the "B.B.J." would be esteemed.—BEE-KEEPER, Cheshunt.

REPLY.—The nurserymen cannot prevent you keeping bees for the reason named. How do they know to whom the bees belong that visit their crops? They would have to prevent bees living in a wild state, such as hollow trees, &c., and also by some means destroy all the bumble and other wild bees in the country, if they are to do away with their presence in a particular locality.

[8320] *Transferring Surplus Queen-Cells.*—On the 20th ult., I found a dead queen cast out of one of my hives. An examination of the stock revealed no eggs or queen, but only sealed brood, including a few drone cells. I gave a frame of eggs and young brood from another hive, and now I find that at least three queen-cells are formed. I propose utilising the surplus virgins for re-queening other stocks. Would the following plan work satisfactorily?—Twenty-four to forty-eight hours before queens are due to hatch, remove old queens, and after young queens are hatched insert them in a cage. I propose making cages, or protectors, for the surplus cells of perforated zinc or wire gauze. Would it be better to let the queens hatch out under the protectors in the hive they are in at present, or remove the cells with protectors just before hatching and let them hatch out each in its appointed hive? Thanks in anticipation. —E. H. L.

REPLY.—If you remove the old queens forty-eight hours before inserting the queen-cells in hives to be re-queened, there will be no need to use protectors. The bees will accept them and the virgins will emerge without further manipulation or attention.

[8321] *A Beginner's Queries.*—I am commencing bee-keeping this spring in a small way, and should be glad of your advice. (1) Will a stock of bees, on their arrival by rail, be difficult to transfer to the hive prepared for them? Will they require sprinkling with syrup or smoking? (2) Should hives be painted inside? (3) How long will syrup keep in a fit condition to give bees if bottled? (4) If I disinfect shallow-frame combs, using the "Guide Book" recipe No. 8, will it have any effect on the flavour of honey? I have taken up the "B.B.J." since last October, and have learnt much through it, and if you will kindly answer the above questions you will increase my indebtedness to you.—DEVONIAN, Plymouth.

REPLY.—(1) If you place the stock in its travelling box on the stand it is to occupy permanently, and let the bees fly for a day or so, it is quite easy to transfer them to their hive the next day, after subduing with smoke in the usual way. You should not use syrup unless the combs are absolutely devoid of food. (2) No. (3) If properly prepared and kept air-tight, it will keep for any length of time. (4) You should not use carbolic on combs from which honey is to be extracted; fumigating with Formaldehyde is the proper course.

[8322] *Queenless Stock.*—Please let me have your advice on the following: Last autumn I bought a lot of driven bees with queen, and put them into a new "W.B.C." hive with drawn-out combs. There were a lot of dead bees a short time ago. I think I ought to have contracted them. On examining them now I can see no brood, and fear the stock is queenless, so I have put in two frames of brood from another stock. Will the bees rear another queen, or will it be necessary to purchase one? The stock is working well, and seems to have plenty of stores, but no brood.—R. DUDLEY.

REPLY.—The bees will rear a queen themselves from the eggs you have given them.

[8323] *Finding the Queen when Hiving Swarms.*—(1) When hiving a swarm in the hive from which it issued, if one desires to destroy the old queen, and there is fear of missing her, would it be a practicable method to cover the entrance with queen-excluder zinc? (2) Do drones come out with a swarm; if so, would not queen-excluder create another difficulty?—INQUIRER, Worsley.

REPLY.—(1) Yes. (2) No.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13 July.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Cambridge Mammoth Show, 1912.—Sections for Horticulture, Bees and Honey. Schedules of prizes for the above Sections are now ready, and can be obtained of the Sectional Secretary, as under. Schedules will be sent to all 1911 Exhibitors, who need not apply. Free spaces offered in Horticultural Section to Growers for Trade Runs. E. F. Dant, Sectional Hon. Sec., 17, Sussex-street, Cambridge.

TRADE CATALOGUES RECEIVED.

A. W. Gamage (*Holborn, London; Bee Farm, Finchley*).—This catalogue has been increased from six to ten pages, and is fully illustrated. There are a number of novelties, and it can be had post-free upon application.

E. J. Burtt (*24, Stroud Road, Gloucester*).—A neat catalogue which contains all the necessary appliances for practical bee-keeping; can be had post-free.

Mrs. Seadon (*The S. J. Baldwin Apiary, Bromley, Kent; Bee Farms, Bromley and Farnborough*).—A well got-up catalogue, which contains appliances designed by the late Mr. Baldwin, who for a number of years was expert to the B.B.K.A. It contains forty-eight pages, in which are illustrated bee houses, incubators, poultry houses, and photographic dark rooms. The perfect bee veil in this catalogue is well worth attention. The catalogue is sent post free on application.

W. P. Meadows (*Syston, Leicester*).—A catalogue of twenty-two pages in which many useful appliances are listed. The reputation of this firm for tinned goods is so well known that it is unnecessary for us to remark upon them here. The gardening bee-keeper will also find useful miniature lights, garden barrows, &c., of a cheap and useful nature listed. It is sent post free on application.

Notices to Correspondents.

J. E. J. (Pontardulais).—*Supering Weak Stock.*—With such a small amount of brood we do not suppose for one moment that the bees will go into the super. The use of the dummy is right if you are working the colony up to full strength, but you should remove the super.

E. H. H. (Tipton).—*Spring-feeding.*—Continue with the syrup food, but make it a little thicker. It will be wise to medicate it also.

C. H. E. (King's Lynn).—*Preventing Swarming.*—Yes. Room in advance of requirements and the providing of bottom ventilation will help to prevent swarming.

C. P. M. (Dorset).—*Bees Dying Outside Hive.*—The bees are young ones which from some cause have been cast out of the hive. See if the stock has plenty of stores.

M. M. (Beeding).—*Honey Sample.*—The honey has been gathered from gooseberry and currant blossoms, and is quite fit to eat.

H. B G. (Monmouth).—*Immature Bees Cast Out.*—The cause of the trouble may either be want of food in the hive, or the brood may have been chilled.

H. E. E. H. (Great Yarmouth).—*Liability for Damage done by Bees.*—(1) Yes, if it can be proved that it was your bees which caused the injury. (2) This depends upon the amount of damage caused. (3) You can insure with the British Bee-keepers' Association. We have sent you particulars.

J. V. (Axminster).—*Using Formaldehyde.*—(1) Your plan will work all right. (2) You should continue to use the formaldehyde until all signs of disease have disappeared. It is not necessary to remove the combs. (3) It is a much better plan to pour it into the rebates under the lugs of the frames, once each fortnight. The quantity required is stated on the label.

Painswick (Glos.).—*Enemies of Bees.*—(1) The insect is a wild bee, female, *Dasypoda hertipes.* (2) *Philanthus apivorus* is a sand-wasp, and is well known as a great bee-killer, more particularly in Southern Europe. It somewhat resembles a wasp, has a black head and body spotted with yellow, and its abdomen is yellow, but there is a triangular black spot on each of its segments.

J. W. M. (Edinburgh).—*Food of Braula Coeca.*—This insect is a parasite, and feeds on the bees' juices.

Suspected Disease.

J. H. (Bristol).—The comb is affected with odourless foul brood.

C. H. P. (Chippenham).—The bees are suffering from "Isle of Wight" disease.

NOVICE BEE-KEEPER.—The comb contains nothing worse than chilled brood.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½ in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

FOR HIRE, a "Herrod" demonstrating tent, 10s. 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand, W.C.

ADVERTISER (amateur Bee-Keeper) wants week's holiday on bee farm early July, live in, terms inclusive, Midlands, superior apartments, experts only.—HARGREAVES, 92, Burnely-rd, Todmorden. v 13

5 CLEAN BAR FRAMED HIVES for sale, with quantity of frames and foundation, 25s. the lot, a bargain.—Apply, HOCKETT, Potter's-road, New Barnet. v 12

NEW Standard Frame Hives and Sections; exchange for Stocks or Swarms, English Blacks.—MOORHOUSE, Rothwell, near Leeds. v 11

GOOD PURE ENGLISH HONEY, 56s. cwt., 28lb. tins; sample, 2d.—T. EVERETT, Soham, Cambs. v 10

SWARMS.—Few to spare, May, 3s.; June, 2s. 6d. lb.; 2 strong healthy Stocks, 1911 Queens, in good hives, £3: 1cwt. medium coloured Honey, good flavour, in 28lb. tins, 52s.; guinea Extractor, good condition, 10s.—ANDREWS, Longthorpe, Peterborough. v 9

CLEAN and ready for use, a few secondhand Hives for sale, very cheap.—ANDERSON, 128, Castelnau, Barnes. v 8

FOR SALE, 3 empty Hives and accessories, good condition £1 the lot.—75 Moffatt-road, Thornton Heath.

2CWT. FINEST ESSEX 1911 HONEY, in 28lb. tins; also large quantity of screw cap bottles; no reasonable offer refused.—SPRATT, Meadow Farm, Witheringsett, Stowmarket, Suffolk. v 7

FEW surplus Stocks, guaranteed healthy, 10 frame lots, in W.B.C. rack, 25s.; 6 frame lots, 20/-; hives used one season, 5/- extra; also few drawn and shallow frames, wide, 8in. rack, 7s., wired.—F. SOFTLY, Letchworth, Herts. v 6

NEW OBSERVATORY HIVE, takes Standard, shallow and sections, 30/-.—FROST, Hartshill, Stoke-on-Trent. v 5

FINEST LIGHT HONEY, granulated, 1lb. screw cap jars, 9s. doz.; good medium ditto, 8s. doz., and 28lb. tins, 14s. each; sample, 2d.—HOLLAND, Swanington, Norwich. v 3

3 STRONG healthy Skeps of Bees for sale, 12s. each.—MULLEY, Upton-on-Severn. v 4

FOR SALE, 2 28lb. tins excellent quality granulated Honey, cheap; 4lb. Weed Foundation (shallow); wanted, pure imported Carniolan Queen Bee.—CROWE, Central-avenue, Wigston, Leicester. v 2

1½CWT. light granulated Honey, chiefly from clover, in 14lb. tins, one tin rather darker, £4 15s., tins included, free on rail.—F. BROWN, Manor House Gardens, Sproughton, Ipswich. u 100

YOUNG MAN seeks situation, life experience in bees, poultry, cows, and plain gardening, make own hives, 10 years good honest character, married, no family.—G. MAY, Lower Farm, Camelsdale, Haslemere, Surrey. v 15

GOOD light 1911 granulated Honey, 3 28lb. tins, 12s. 6d. each.—PARKER, Hillside, New Thundersley, Essex. v 1

BAND SAW, 17in. rubber covered pulleys, tilting table, for sale, or exchange for 35s. worth of Bee Appliances.—EZRA BALL, 1, Edge Green Lane, Golborne, near Newton-le-Willows. u 99

3 WHITE WYANDOTTE HENS, with 13 pure bred chicks, month old, good laying strain, 13s. each lot; cash or deposit.—F. COATES, Ewen, Cirencester. u 98

PORTFOLIOS: Indian Architecture, Details, Carved Doors and Arches, 124 plates, cost £4, take 20s., or 2 swarms.—"ARCHITECT," "B.B.J." Office, 23, Bedford-street, Strand. u 97

BEE HOUSE WANTED, 10 by 7 by 6, or nearest, cheap; give full particulars, dimensions.—CHARLES DRAKE, Chatteris. u 95

RACK and 10 shallow wired Combs, clean, 3s.; 6 dozen shallow Frames, new, 5s. 6d.; 5 strong Stocks, in bar frame Hives; what offers? also cwt. good light granulated Honey.—R. JOHNSON, Little Hinton, Swindon. u 94

ADVERTISER desires to spend two weeks in modern Apiary.—Please state terms to WILDER, 18, Harvest-road, N.W. u 93

FOR SALE, strong stock Native Bees, 1911 Queen, guaranteed healthy, 25s., including case.—ARTHUR, 226, West George-street, Glasgow. u 92

STRONG healthy Stocks of English black Bees, on wired frames, 25s.—WHEATON, Exton, Topsham, Devon. u 91

FOR SALE, 20 Beehives, W.B.C. principle, cheap.—WOODS, Boxford. u 89

BEES.—Few excellent Stocks, on 8 Standard frames, hardy, and perfectly healthy, 30s. each, travelling boxes free, cash or deposit.—JOSEPH DRAPER, Saw Mills, Aughton, Ormskirk, Lancs. u 65

2CWT. last season's Honey, guaranteed pure, in tins, 6d. a lb.—DAVIES, Gelly, Llanwrda, S. Wales. u 72

FOR SALE, few strong Stocks, guaranteed healthy, 8 frames, 35s. each.—CLARKE, Pollard's Hill, Norbury, S.W. u 12

1 DOZ. Standard Frame Hives, by Lee, nearly new, 6s. 6d., complete; or exchange good sections; Extractor, by Meadows, 14s. 6d.—W. A. WOODS, Normanby, Guildford. u 83

SWARMS from frame Hives, May to June 12th, 14s.; boxes, 1s. extra, or returned carriage paid.—J. REAVELEY, Starbeck, Harrogate. u 85

CHAPMAN'S Honey Plants, 20, post free, 3d.; seeds, 2d.—STEVENS, Churchill, Oxfordshire. u 56

WANTED, Stocks on frames, at once; also swarms, May and June.—POSTMASTER, Breachwood Green. u 56

DON'T FORGET to plant Limnanthes Douglassii, Phacelia Tenacetifolia, good honey plants, 100 1s.—A. TOWN, Kingston Gardens, Abingdon, Berks. t 45

BUSINESS ADVERTISEMENTS.

PURE ENGLISH HONEY, 4 doz. screw top jars, 8s. per doz.; 12 racks of drawn out super frames (10 frames in each); offers; honey extractor, in excellent condition, £1, or near offer—36, Forest Drive East, Leytonstone, Essex. v 14

Editorial, Notices, &c.

BEE-KEEPING IN RUSSIA.

We do not hear much about bee-keeping in Russia, although from time to time someone of our Russian readers gives us a glimpse of the progress made in that vast country. As early as the thirteenth century the production of honey and wax was a prominent rural industry, and apiculture was then regarded as of great importance to the economy of the country, and the products of the bee-keeper served not only for home consumption, but figured in the records of articles exported to Western Europe. In the sixteenth century wax is said to have been exported to England from the White Sea. The trade flourished until the beginning of the eighteenth century, when the imposition of certain fiscal duties by Peter the Great led to a decline of the bee-keeping industry. Bee-keeping is practised throughout European Russia, and in many parts of Siberia, and forms an important branch of the occupation of the people in some localities; but even in the Caucasus and Astrakan, where it is the principal industry of a considerable number of the population, neither honey nor beeswax is produced in quantities sufficient to meet the demand. There is a large consumption of honey in Russia, and much of it is used in making mead, which is a popular beverage, and there is also a demand for wax, which is used for making candles required in the ritual of the Church. At the present time Russian apiculture is in a state of transition, owing to the changes in the natural and economical conditions of the country. It is no longer possible to pursue the industry according to primitive methods, without knowledge and without expense. We are reminded of the great progress that is being made by receipt of *Ptschelovodstvo uv Kazanskoy Goubernea*, by A. E. Chabastcheff, and published by the Kazan Bee-keepers' Association, Kazan. This is a report respecting the progress of bee-keeping in the Government of Kazan in East Russia. This Government, which is about half the size of England, is particularly well suited for bee-keeping, the climate being mild, and although the winter is keen it is not protracted. Spring and summer are serene, and in the autumn fruit comes to perfection. Apples, pears, cherries, plums and apricots abound and furnish good pasturage for bees. Almost every cottage has its garden. About half the population are Russians, the remainder being Tartars, and a few Cheremisses and Chavasses. In a census taken in 1903 we find there were 4,167 apiaries containing 93,724 colonies. This showed a great increase on 1895, when there were only 687 persons returned as keeping bees. To obtain more correct statistics in 1909, the co-operation of the Russian clergy and the Tartar mollahs was obtained, and papers of questions were sent out in both languages. The work was

RUSSIAN APIARY, SHOWING LOG HIVES.

done in a very systematic manner, and the answers received averaged 59 per cent. from the clergy, and 85 per cent from the Mussulman mollahs, who thus showed a greater interest in the affair.

The report shows that in 1908 there were 6,823 apiaries, containing 131,803 colonies, which is an increase since 1903 of 2,656 apiaries and 38,079 colonies. Bees are kept in three different ways, in log hives, movable frame hives, and hives with simple bars. The log hives (*kolodka*) are usually made of well-hollowed trunks of trees. At the lower end the hive is open and fixed to a piece of board. The upper end is sometimes the continuation of the trunk, and sometimes a separate attachment made of wood or clay, which forms a super, and can be taken off when desirable. In the interior of these rude hives small crossbars are fixed to sustain the comb. The improved movable frame hives (*ramotchni oulei*), the most popular of those introduced being made on the English and American principles, although also others of Russian manufacture are used. Bar hives (*lineyatchni oulei*) are simply boxes with bars instead of frames, and represent the gradual transition from the log to the movable frame-hive. The illustration on p. 191 shows an apiary consisting principally of log hives, there being two movable frame hives shown in the foreground.

Of the total number of colonies in Kazan 96,342 were in log hives, 28,426 frame hives, and 7,035 bar hives. As only three-fourths of the correspondents sent replies, it is estimated that there must be at least 180,000 colonies kept. The number of colonies is, according to population, 6.1 per cent., and there are 2.4 colonies to every square verst (about two-thirds of a mile).

The Tartars have not adopted the frame hive to any large extent, there being only 5.3 per cent of them, and 94.7 per cent. of log hives. Among the Christian population 27.8 per cent. of the colonies are in frame hives and 72.8 per cent. in log hives. It is interesting to note the professions engaged in bee-keeping. The largest number of colonies are kept by the clergy, who have 4,207, while school teachers only keep 1,263, and societies 2,148. Bee-keepers owning more than 100 colonies consider it an advantage to make their own comb foundation, and there are forty-three who have machines for this purpose. In 1895 comb foundation was a comparative novelty in Russia, and was made in very small quantities, and very few manufactured it for sale. Although twenty years ago frame-hives were scarce, so rapid has been the progress with them that it is calculated in ten years log hives will be things of the past. As in other countries, foul brood is prevalent in Russia, and there is, therefore, a chapter devoted to this subject, with a map showing the districts in which it exists and where it has existed. Of 178 cases reported, nothing was done in forty-eight, while thirty-two colonies were destroyed, twenty-six were cured by driving, twenty-five were treated with formic acid, seventeen by cutting out the combs, thirteen with salicylic acid, four by driving combined with salicylic acid, and four with formalin, the remainder being treated with various other remedies.

The statistics respecting honey returns are interesting, and show that whereas an average of 6.29lb. is produced by the log hives, the average harvest from frame hives is 20.16lb. per hive, or over three times the yield of log hives. The total yield of honey was 15,150 poods (1 pood equals 36.11lb. av.) from the 96,342 log hives, and 33,022 poods from the 35,461 frame and bar hives. The total value was 264,176 roubles (1 rouble equal to 1s. 1½d.). This contrast shows what a loss is sustained by not adopting frame hives.

There are two folding maps in the report, showing the extent of bee-keeping in the Government of Kazan, and a chapter is devoted to biographies of the leading bee-keepers, and descriptions of their apiaries. The first is naturally that of Professor Boutleroff, to whom bee-keepers in this Government are indebted for modern methods, as he was the first to introduce frame hives in his apiary. It was also he who was the first to introduce phenol as a cure for foul brood, so far back as 1874. In 1880 he published a very complete manual, which has gone through several editions, and is even now regarded as a standard work. There are also portraits of Patechin, Lubarsky, and several other leading bee-keepers. Among the illustrations of the apiaries we find that of M. A. Dernoff and Co., situated in Mamadischa, near the River Viatka. Mr. Dernoff is the editor of *Ptschelovodnaya Schisn*, and has done much for the encouragement of modern methods of bee-keeping. There is also the apiary of Mr. A. E. Chabastcheff, the secretary of the Kazan Bee-keepers' Association, and author of this report. His apiary, which we illustrate, consists of 105 modified Dadant hives.

The Kazan Bee-keepers' Association was founded in 1904, and one of the methods of instruction it employs is by means of a Museum of Apiculture, which is moved from place to place, and in which courses of instruction are given. In this way practical instruction is conveyed to those who do not otherwise readily adapt themselves to new methods, and converts are obtained. The visit of the Museum to different districts often results in a local Association being formed. During

four years the Museum has visited forty-eight districts. At a recent meeting of the Kazan Bee-keepers' Association the Chairman of the B.B.K.A. (Mr. T. W. Cowan) was unanimously elected an honorary member of the Kazan Association. We have been much pleased in reading about the great progress that has been made in recent years, and congratulate the Association on the work it has accomplished.

A BEE-KEEPERS' ASSOCIATION FOR SCOTLAND.

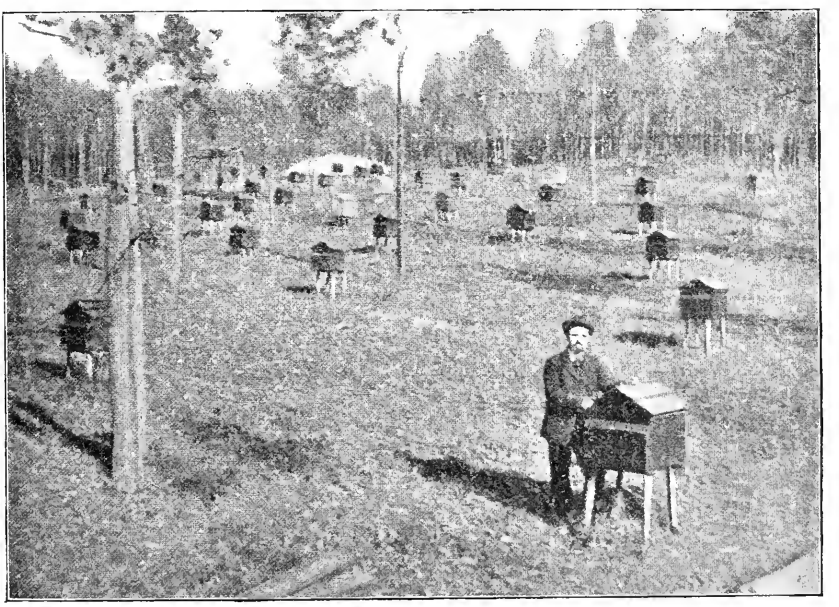
A meeting of bee-keepers was held by kind permission of the Governors in the Edinburgh and East of Scotland College of Agriculture on April 27th, the object being to consider what steps, if any, should be taken with regard to forming a Bee-keepers' Association for Scotland. There was a fair attendance, and a large number of letters promising to support the movement were laid before the meeting. Delegates from several counties spoke in support of the proposed association, and it was ultimately resolved, on the unanimous vote of those present, to proceed with the formation of a Scottish Bee-keepers' Association. A committee was appointed to make the necessary arrangements for the inaugural meeting to be held on May 25th, in the same place, when it is hoped as many bee-keepers and others interested as can will attend.

SOMERSET B.K.A.

PRESENTATION TO MR. L. E. SNELGROVE.

There was a large attendance at the annual general meeting of the Somersetshire Bee-keepers' Association, held at Weston-super-Mare on April 27th, under the chairmanship of Mr. T. W. Cowan, F.G.S., F.L.S.

Mr. L. E. Snelgrove, B.A., L.C.P., hon. secretary of the association, presented the annual report, in which he said the year 1911 would long be remembered by Somerset bee-keepers as one of the most favourable ever known. The association had flourished accordingly, and this was best shown perhaps by the fact that its income had risen from £80 to £113 5s. 8d. The financial state of the association was now better than it had ever been, the cash balance in hand being £11 0s. 3d. Three new branches of the association had been formed for 1912. The list of members had been carefully revised, and although a large number had dropped out, at the time of writing the report the association comprised some 470 bee-keepers, a net increase of sixty members during the year. In addition many promises to join had been received, so that there should be about 500 members for 1912. The experts paid 620 visits to members, and examined about 1,600 hives. Of the latter only sixty-five, or 4 per cent., were reported as suffering from foul brood. This was a remarkably clean bill of health, and was undoubtedly



APIARY OF M. CHABASTCHEFF, MAMADISCHA, RUSSIA.

attributable to the regular visitation of members by the experts. Disease had been practically eliminated in the districts of Weston-super-Mare, Street, and Yeovil, where at one time it was almost impossible to keep bees. The dread "Isle of Wight" disease had been reported from four districts, viz., Taunton, Weston-super-Mare, Martock, and Bristol. All these cases had been dealt with promptly by the local experts, and now he knew of no case in the county. He regretted very much that a continuous increase in his professional duties and the concurrent increase in the responsibilities connected with the association compelled him to resign his post. He took this opportunity of saying how much he appreciated all the help and sympathy he had experienced at the hands of the Chairman, the active members of the council, and of members generally.

The report and accounts, having been appeciatively commented upon by the Chairman, were unanimously adopted; and Mr. Cowan presented medals, certificates, &c., gained by members during the year.

The Chairman, on behalf of the members of the association, then made a presentation to Mr. Snelgrove of what he described as a "slight souvenir" of the devoted and invaluable service that gentleman had rendered as hon. secretary and in other ways. Mr. Cowan observed that he need scarcely say he should be expressing the sentiments of all connected with the association when he remarked that by Mr. Snelgrove's resignation as hon. secretary they were losing one whose untiring work and personal qualities were esteemed by all.

The gift consisted of a massive solid-silver rose bowl standing on an ebony base, the bowl bearing the inscription: "Presented to Louis E. Snelgrove, Esq., B.A., L.C.P., by the members of the Somerset Bee-keepers' Association in recognition of his valuable services as Honorary Secretary, April, 1912."

Mr. Snelgrove, in responding, said he felt unable at all adequately to express his thanks to the members of the association for the kindness they had shown him. Naturally he should prize the gift for its value, but even more highly should he treasure it on account of those who had been responsible for it. He should value it as coming from them more than if it had come from any other body with which he was connected, for the friendship existing among bee-keepers was proverbial; there seemed to be some mysterious quality in the sympathy existing between them which led to sincere and permanent friendship. Thus, although he thought he could say without egotism that he had worked hard for the association, his work as hon. secretary, as a visiting expert, and as a county council lecturer had comprised a succession of pleasing experiences. Then, too, he had had the great gratification of seeing his work crowned with success. Beginning in a very small way, the association had possessed but forty-one or forty-two members, whereas now it comprised twelve times that number. After again heartily expressing his acknowledgment of the gift, and the kindly feeling which it embodied, Mr. Snelgrove also thanked the officials and members—making especial reference to the local hon. secretaries and visiting experts—for the loyal aid they had at all times rendered him.

Lady Smyth was re-elected president of the association, and Mr. L. Bigg-Wither, of Wells (who had previously done good service as assistant hon. secretary), was elected to succeed Mr. Snelgrove as hon. secretary and treasurer, Mr. E. Walker being appointed assistant hon. secretary. —*Communicated.*

AMONG THE BEES.

WATER IN THE APIARY.

By D. M. Macdonald, Banff.

In many apiaries drinking troughs are almost an utter necessity. In spring most apiaries are benefited by special provision being made for facilities which would make drinking sources more readily accessible to the bees. A large quantity of water is consumed in the brood-nest when active breeding is being carried on. It is an open question indeed whether it would not be good policy to give the water to the bees in a lukewarm condition, and a little salt placed in the troughs would be advantageous.

A tap should be near at hand, if possible, to afford means for hand-washing. Honey is a very sticky substance, and it is frequently necessary to wash the hands in order that hives or appliances may not be daubed and dirtied. A basin of water and a towel should always be handy when section honey is being handled to insure that the clean white wood may not leave the apiary for the consumer showing thumb and finger marks. It should be a rule indeed with every bee-keeper that comb-honey should not be handled with unwashed hands.

These same sections, when lying about for some time, especially in a warm, dry place, become so brittle that they snap and break when being folded. A little water run across the V cut from the spout of a jug will damp the wood, and in this way allow of safe folding. Every-one can then be made up without any loss.

During a period of excessive heat swarming can often be averted by keeping the hive roof and front cool, and this can be done by dipping sacks or sheets in water and hanging them dripping as they are over the hives. During the heat of the

day renew the damping process a few times, and you will add to the comfort of your bees, and probably save any breaking up of forces.

With robbers troublesome during a dearth of nectar-flow, some soaking wet grass placed on the flight-board of an attacked hive may make the prowlers desist, and send them to some more favoured spot. A good liberal douche from a watering-can rose, or from a powerful syringe, played steadily on the marauders may help to cool their ardour and drive them away from the attacked hive.

A swarm showing symptoms of distress after clustering may be kept from rising and playing truant if the grape-like bunch is cooled by a fine spray from the rose of a watering-can, and even after they have taken wing, a heavy discharge of rain-like moisture from a pipe with a supply of water under pressure is worth all the other specifics ever recorded to save a runaway swarm. The bees, deceived into the idea that it is actually raining, return to the parent hive in the belief that weather conditions are unfavourable for a trek at that particular time.

Recently it has been recommended that "drowning" a queen in water and then introducing her directly into the hive is one of the safest plans for securing the acceptance of the new mother. Of old, bees were united safely on this plan. Both lots were dumped into a vessel containing water. When this was run off and the bees left to dry in the sun they amalgamated peaceably.

Many believe in water as a sting cure, but there is a difference of opinion as to whether it should be applied hot or cold. One party advises dipping the stung part in a dish of cold water, or, if this is impracticable, to cover it with a cloth thoroughly saturated with the liquid. Another party strongly urges the use of water as warm as can be endured, and they both plead that this aids circulation, saves swelling, and rapidly works a cure.

Water is a necessary ingredient in all the kinds of food artificially administered to the bees. More of it is required in the thin syrup given to the bees in summer, less in the thick autumn food for winter stores, and less still in the cake of candy supplied in early spring. Even honey, when re-fed to bees, is best when it is thinned down half and half, or one-third water to two-thirds honey. If dry sugar at times should be fed it only means that the bees themselves must forage for the water to thin it down.

When from any cause a floor-board gets fouled, nothing can clean it up better than a basin of water as hot as it can be used, with a good lump of soda and a liberal dose of carbolic soap. A thorough application of this administered with plenty of "elbow-grease" purifies it as nothing else can. All the recipes (see "Guide Book," pages 197-8) for cleaning and disinfecting hives require water for their proper application. Formalin, carbolic, phenyle, all require solution in a considerable quantity of pure water to fit them for performing their separate duties or imparting their healing virtues.

Appliances, before being packed away for the winter, should be cleaned thoroughly to be ready for next year's work. Every empty hive, before being again prepared for bees, should be washed and purified. Periodic washing and disinfecting of section racks, dividers, and similar small articles used about an apiary is to be recommended.

There is one place where water about a hive can work only evil to both the bees and the bee-keeper, and that is *inside*. Particular care should be taken to insure that there is no gentle percolation working its way from unobserved cracks in the hive roof down to the quilts and coverings. Particularly is this found to be injurious to the bees' well-doing during winter. Damp coverings will almost certainly cause the destruction of even a good stock at that season of the year.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of April, 1912, was £5,425.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8446] The fine weather continues week after week, and no rain. It is some seven weeks since we had the last rain; the whole month of April passed without a shower. On Easter Tuesday a hailstorm lasting about twenty to thirty minutes fell in Newbury, and now, in the middle of May, only one light shower has fallen—just enough to lay the dust. How will this affect the prospects of bee-keepers?—which are none too rosy, I regret to say. The

long drought of 1911 killed most of the new grass crops, and having no root crops for sheep food the farmers are feeding their sheep on the growing corn crops and (which I never saw before) the young sainfoin crop. This means the loss of the chief source of our honey harvest, so far as regards those fields which are fed off by sheep. The long spell of fine weather has helped the bees to build up, and our stocks are strong, ready for the honey-flow should it come. I hear from early districts that some bee-keepers have sections nearly filled; while here we are only now preparing to put on the supers. Only extra strong stocks show the new edges to the brood-comb top rows of cells these last few days.

For preparing section racks I again recommend my plan of laying the sections on a wet cloth folded so that the folding corners become tough (not the toothed ends); lay the folded cloth on the brick floor, place the sections on the cloth edgewise, then turn back the cloth over the top edge, and after leaving them thus for a few hours, you will find every section will fold without breaking. Now for waxing the sections I use full sheets of British "Weed" foundation, extra thin, and fix same in sections by first warming the top edge of the piece, laying it just a little over the middle of the section, and running the little roller (first dipped in water to prevent the warm wax sticking to it) quickly to and fro, and the foundation is fixed securely, and not one piece in a thousand is ever pulled off by the weight of bees when working it out. Two bee-way sections 4¼in. by 4¼in. by 1⅝in. wide glaze better than the four bee-way, and also handle better when unglazed. Bee-keepers should do everything in their power in their own *interests* to put their produce on the market in the best possible form; the article keeps in a good saleable condition much longer if the comb is not damaged. Most of us have seen sections in shop windows which have not looked very appetising, the result being slow sales, and consequently stock left on the hands of the bee-keeper.

New swarms on arrival by rail from long distances should always be fed at once before hiving. The "Guide Book" gives a good illustration of how to hive a swarm.

Wasps.—Keep up a vigilant war on this our enemy. I killed ten queen wasps the other evening in the roofs of my hives and several on other evenings, and destroyed three nests just started also in the roofs of my hives.

It must be gratifying to readers to see from reports of the County Associations that foul brood is being wiped out. One association reports no case of foul brood, another only two per cent., and other associations a gradual declining yearly number of cases. Surely this points to the futility of Foul Brood Acts. —W. Woodley, Beedon, Newbury.

POLLEN COLLECTING.

[8447] After having examined the mandibles of numerous pollen-collecting humble-bees, I have found a minute ball of moistened pollen in two specimens, one a worker of *Bombus protorum*, and the other a queen of *B. derhamellus*, both of which were working on the white dead nettle, a plant in which the pollen gathers on the top of the head and front of the thorax from which it is brushed by the feet. In most specimens I examined there were a few more or less moistened pollen grains in the bases of the mandibles, but these were present also in a specimen of *Psithyrus barbutellus*, which being a parasitic bee does not gather pollen for storage. —F. W. L. Sladen.

"ISLE OF WIGHT" DISEASE.

[8448] The letter of Mr. J. C. Bee Mason in your issue of May 2nd (8439) is interesting if only as starting a new theory (one of many) as to the cause and origin of the "Isle of Wight" disease.

First let me make my position clear by saying that I am still one of those happy ones whose only acquaintance with this dreaded complaint has been through reading of its ravages in the columns of your valued paper, and that I hope to remain in that position. But that should not debar me from offering criticism of this new theory. In testing its accuracy it would be well to know:—

(1) Whether any bees living in a wild state in districts devastated by this disease have succumbed.

(2) To what extent other bee-keepers have had this disease in colonies which have built their own combs.

(3) Whether amongst Mr. Mason's stocks which succumbed there were any which had had similar facilities for comb-building as his stocks 7, 14, 23.

(4) Why the disease should be contagious or infectious if it is what may be described as a "congestion of the wax-secreting glands."

(5) Whether newly-hived swarms in the act of building up their own combs (in skeps) have been known to be attacked.

Other questions will suggest themselves, but I do not wish to take up any more of your space than just to say that it appears to me that the bees in Mr. Mason's stocks 7, 14, and 23, which were surviving last October, were not the bees which had had facilities for comb-building earlier in the year, being of necessity the produce of the later summer brood.—D. Wilson.

FOUL BROOD VANQUISHED.

[8449] I have pleasure in stating that I have had a letter from a friend in South-West Lancashire (who is a most successful bee-keeper and very proud of his certificate) in which he strongly recommends the use of the "Herrod Apicure" in cases of foul brood, *having proved its efficacy* in the case of a diseased stock in a neighbouring apiary.

This is indeed good news for the bee-keeping world, and impels one to ask our common benefactor, Mr. W. Herrod, what it is to be—a monument, a testimonial, or the everlasting gratitude of all lovers of bees?—E. M., North Wales.

[We do not, as a rule, follow the practice of a contemporary and fill our columns with appreciations, our space being far too limited to put in all the good things we receive from contributors. We make an exception with regard to the above (which is only one of hundreds of appreciative letters which we receive in connection with the "British Bee-keepers' Guide Book," our JOURNALS, Apicure and other matters) for this reason, that in one quarter at least reflection has been cast upon "Apicure" and a statement made that it is "nothing but naphthaline." Had this been the case, cures such as we have records of could not have been effected. Apicure was tested for five years before being put upon the market.

We can assure our correspondent, whom we do not know personally, that his letter is very gratifying to us. We are quite satisfied with the knowledge that our efforts are benefiting bee-keepers. Apicure is rather an expensive article on account of the process of manufacture, and at the present time we are just covering expenses, instead of making a fortune as some people imagine. Our one regret is that we cannot afford to send it gratis to all whose bees are diseased. We are trying to reduce the cost and also to put it up in larger quantities than at present.—W. HERROD, Junior Editor.]

ENTOMOLOGY.

[8450] Amongst your readers there are, I am aware, some few who take a scientific interest in our *Hymenoptera aculeata*, a branch of entomology somewhat neglected by our younger naturalists, probably because it is not considered so fashionable as lepidopterology. I have amassed a considerable collection of lepidoptera, and have during the past two years commenced one of our wild bees, and desire to make the acquaintance of some Londoner in a similar position to myself, desirous of the companionship of an active field-worker and student of this most interesting branch of science. Such an individual might communicate with V. E. SHAW, "Betula," Fallow Court Avenue, North Finchley, London, N.

FIRE AT A BEE-APPLIANCE FACTORY.

Just after midnight on May 9th a fire, which resulted in a considerable amount of damage, was discovered on the premises of Messrs. Jenkins and Pinder, ironmongers and bee-specialists, Salisbury.

The fire broke out in a store-room on the top floor and was practically confined to this apartment. The origin of the outbreak is supposed to be due to a lamp which Mr. J. E. Pinder had been using for the purpose of disinfecting bee-hives. Mr. Pinder left the store-room, which contained a number of hives and a stock of hardware, about ten o'clock, and then all was apparently safe. Between twelve and one o'clock his daughter, who was sleeping in a room almost underneath the store-room, was awakened by a crackling sound, and on going on to the landing she saw the reflection of fire. She at once cried out, and Mr. Pinder, being aroused, ran to the fire station, while almost at the same time a policeman had noticed the blaze and had given the alarm.

When the brigade arrived the store-room was well ablaze. A large quantity of water was poured into the building, but despite the efforts of the firemen the contents of the store-room were practically destroyed and a good deal of damage done to the building, which is an old one. Fortunately, the stock of bee-keeping appliances—which is necessarily large at this time of the year—was in a separate portion of the premises and was not touched.

Queries and Replies.

[8324] *Drone Comb below Brood-Chamber.*—I have examined my bees, and find they are all very strong, with plenty of brood and honey. One hive had a lot of drone-comb built beneath the brood-box, full of eggs and grubs, although there was room in several of the frames for the queen to have laid her eggs in. I have broken off this comb and destroyed it, and have placed a super of brood-comb on top of the body-box, so that the queen shall have plenty of room for laying. I shall be glad to know if I have done the right thing, or if I ought to have done otherwise. I shall be very glad of a reply in your most useful journal.—H. B. R., Broughton.

REPLY.—We fail to understand how the bees managed to build combs below the

brood-chamber, if it was placed on the floor-board. There must have been some vacant space, or perhaps it is the form of hive you are using that allows this to happen. You should not have allowed the queen access to the shallow-frame super; but have confined her to the brood-chamber, where, as you say, there is plenty of room for her to lay.

[8325] *Catching a Swarm, and other Queries.*—As a reader of the "B.B.J." I would be very glad if you will answer the following questions in the next issue:—(1) I have two hives which I expect to swarm before long. As I do not like the job of opening them to look for queen-cells, I have decided to make two slides of queen-excluder zinc to prevent the queen leaving the hive. Is there any danger of the swarm going away without the queen? (2) Do the bees obtain from *Limnanthes Douglassii* pollen or nectar, or do they get both? (3) Can you give addresses of nurseries that will supply apple trees, plum trees, &c.? (4) How many pounds of driven bees is sufficient to cover ten frames, or make a strong stock?—W. T., Llanfyrnach.

Reply.—(1) Unless you provide a chamber outside for the bees to cluster in the swarm will most probably be suffocated. Why not use a "Brice" swarm-catcher? (2) Both. (3) We have found Messrs. Peason, of Lowdham, Notts, most reliable. (4) Not less than about 6lb. of bees will be required.

[8326] *Stimulative Feeding.*—Will you kindly answer the following:—(1) I have a strong colony which is supered, and yet the bees throw out mature brood, some of it drones. I fed the stock, but they will not take the syrup; they are drawing out the end sheets of foundation (combs were given at centre). (2) How shall I stimulate such a colony? there are about two to two-and-a-half frames of sealed syrup in the hive (medicated). (3) Can I rely on the bees to eat this up before the space is required for breeding, or should I remove and extract it?—One of the frames has one-and-a-half sides of syrup sealed and other half pollen. If wise to remove these and extract, would it do to remove this one also, or would loss of pollen upset the internal order of the hive? (4) You speak of gentle feeding to draw out comb. Would three holes of feeder be too much? Should it be given day and night? Would medicated syrup be unwise lest it is stored by the bees? (5) To double a strong colony which is supered, should I temporarily remove super until combs are drawn out, and then replace, feeding gently the while, or shall I feed with supers on? Thanking you for kindness in anticipation.—S. B., Derby.

Reply.—(1) The brood has no doubt been killed through chilling. (2) There is no need to stimulate. (3) Yes, the bees will eat the food as they require it. Don't extract it. (4) One or two holes are quite sufficient for slow feeding. Never feed with a super on. (5) Yes, it will be necessary to remove the super.

[8327] *Microscopic Study of Foul Brood.*—(1) What are the dyes *Bacillus alvei* will receive in preparation for the microscope? (2) Are the germs transparent in both spore and rod stages? (3) Can the *Bacillus* be recognised at all without staining (*a*) on the body of the bee, (*b*) on comb or (*c*) in the intestines? (4) What is the magnifying minimum at which they can be recognised, or how many times are they to be magnified? (5) Is it known what culture *Bacillus alvei* will grow in; can we cultivate it in any other media than the larva of the bee? (6) A friend has made a six-frame observatory hive with the frames in two sets of three side by side; is this not the wrong principle? Whilst heat will ascend, it will not economically extend itself, so as to be of the most service to the bees. Ought not this hive to have been built with the six frames tiered one above the other? What will be the result when the hive is in use? (7) Could you oblige many readers by giving a series of articles on the microscope and research in connection with bee diseases at some future time in "B.B.J."?—W. E. W., Norwich City.

Reply.—(1) Methyl violet or rosin and water. (2) Both are easily seen under the microscope and are opaque. (3) You will find them best in the intestines, and they can be seen without staining, but it is much better to stain them. (4) 1-12th oil immersion is the best. (5) They can be grown in beef broth, gelatine, or agar. (6) The observatory hive will be all right providing it is kept in a room. (7) Such articles have already appeared at different times in the Bee Journal.

[8328] *Drones at Swarming-time.*—In your answer to a correspondent last week you stated that drones do not go with the swarm. That was my belief, but I bought some swarms this year, one of which had quite a number of drones among the bees. What do the presence of drones in the swarm mean?—C. R.

Reply.—The answer you refer to was not printed in its entirety. Drones do accompany a swarm, but the number is so small that they would not cause trouble in finding the queen. As a rule a large number of drones accompany a cast and the queen being a virgin the reason is obvious. The presence of drones in a swarm is not an indication of anything in particular.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

June 12 and 13, at Romford, Essex. In connection with the Essex Agricultural Society, the Essex Bee-Keepers' Association will hold their Annual Show of Honey, Wax, Bees, and Appliances. Schedules from G. R. Alder, Hon. Sec., 175, Hainault-road, Leytonstone. **Entries close May 31.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13 July.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. Schedule, &c., from James H. Hadfield, Hon. Sec., Lincs. Bee-Keepers' Association, Alford, Lincs. **Entries close 14th June.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Cambridge Mammoth Show, 1912.—Sections for Horticulture, Bees and Honey. Schedules of prizes for the above Sections are now ready, and can be obtained of the Sectional Secretary, as under. Schedules will be sent to all 1911 Exhibitors, who need not apply. Free spaces offered in Horticultural Section to Growers for Trade Runs. E. F. Dant, Sectional Hon. Sec., 17, Sussex-street, Cambridge.

Notices to Correspondents.

QUEENIE (Lytham).—*Queen-rearing.*—By careful attention in providing food and wrapping up well you can rear the number of queens you desire by the method you suggest.

BELLE VUE (Ipswich).—*Making Increase.* (1) Yes, if the stocks are strong enough. (2) You can introduce the queen by means of a pipe-cover cage without risk. (3) Many thanks, but we have already procured a photo. (4) They are queen wasps.

NOVICE (*Wrexham*).—*Bees Fighting amongst themselves.*—It is difficult to say what was the cause of the commotion without an examination. You had best open the hive and see if anything is wrong. Write us again if you notice anything unusual.

H. R. A. (Chigwell).—*Carbolic Acid for Disinfecting Combs.*—Yes, there is no doubt that if you use the combs the honey will taste of carbolic acid.

ESSEX BEE-KEEPER.—*The B.B.K.A. Experimental Apiary.*—The apiary is not yet established, but as soon as it is, full particulars will be given in the BEE JOURNAL.

B. N. (Chalfont).—*Bees in Skeps.*—It would be best to transfer the bees into frame-hives, and the present time is best for this purpose. The death of the grubs has either been caused by lack of food, the wax-moth grubs in the comb, or they have been chilled.

A. A. (Blandford).—*Disinfecting after "Isle of Wight" Disease.*—Use Ayles' "Isle of Wight" Cure; it is more efficient and much less trouble than the method you propose, or if preferred you can disinfect the hives with a painter's blow-lamp. You evidently have not followed the matter very closely. In May, 1911, the Board of Agriculture issued a leaflet on the disease and its treatment, which can be obtained on application to the Secretary, 4, Whitehall Place, London, S.W.

H.T. (Eccles).—*Re-queening.*—Yes, but it is an unsatisfactory way of working.

ANXIOUS BEGINNER (Wilts).—*Hiving a Swarm.*—If the frames in the brood-chamber are fitted with full sheets of foundation the bees will go in all right, but there is no objection to your removing the outer case until the swarm is in the hive, if you prefer to do so.

F. W. TYTLER (Harrow).—*Bee Districts.*—All the districts you mention are good ones for bee-keeping. There is no association in Bucks affiliated to the B.B.K.A. The Secretary of the Middlesex B.K.A. is Mr. W. Herrod, 23, Bedford Street, Strand, London. You had better join this.

ALPHA (Darwen).—*Sending Bees to the Moors.*—(1) The bees are British Blacks. (2) We cannot see signs of any disease. (3) Bees will fly a distance of two miles in search of nectar, but the nearer they are to the heather bloom the better, as it gives them the opportunity of working if there is only an hour or so of suitably fine weather during the day.

T. H. (Llanidloes).—*Disinfecting Hives and Combs.*—(1) If you scorch the hives thoroughly inside with a painter's spirit-lamp, as instructed in last week's BEE JOURNAL, it will be safe to use them without the painting with carbolic you propose. (2) Spray the combs well with a solution of Formaldehyde. It can be had with full instructions from this office for 1s. 6d.

H. H. A. (Worstead).—The bee is not a queen, but an ordinary worker whose

abdomen was much distended with honey.

A. B. B. (Reading).—*Colour of Honey from Pea-blossom.—Drones Cast Out.*—The colour of the honey from pea-blossom will be medium. The bees evidently require food; this will account for the dead drones cast out of the hive.

Honey Samples.

G. W. G. (Ilford).—The honey is a nice sample, gathered from gooseberry, currant and sycamore bloom.

Suspected Disease.

E. M. C. (Dover).—Comb is badly affected with foul brood.

G. N. (Sussex).—There is nothing worse than chilled brood in the comb sent. Try re-queening and see if the stock will improve.

H. I. (Taunton).—A case of foul brood.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

GOOD OPPORTUNITY for beginner; Hive and Accessories, cheap.—47, Ardoch-road, Catford, S.E. v 20

LADY'S good Cycle, 15s.; Camera, £3 12s. 6d.; Kodak, 25s.; Zither Banjo, 15s., cash, bees, or honey.—COX, 92, Beaumont-road, Bournville. v 19

4 GOOD W.B.C., with lifts, complete, by Lee, 12s., complete, each; 6 Holborn and Alliance ditto, 6s. 6d.; Rymer Honey Press, as new, £2; serviceable Hives, with frames, 4s.; Racks of Sections, with metal separator, 2s. 6d.—W. WOODS, Normandy, Guildford. v 18

NEW FRAME HIVES, will exchange for bicycle or honey.—MISS DOFF, 5 Offa-road, Bedford. v 17

FEW June Swarms for sale; stamp for reply.—DAVIS, Snakesbury House, Newington, Sittingbourne, Kent. v 15

SCOTCH HONEY, heather and clover, direct from the producer, guaranteed in prime condition, well filled and sealed all over, about 200 lbs. Approval; what offers?—GEO. M. HENRY, Inverkeilon, Montrose. v 23

WANTED, 1cwt. light Honey; price and post sample.—COOK, Torwood, Ashford, Middlesex. v 25

WANTED, a Cowan geared Extractor, perfect condition, not old.—KNOWLES, Poplar-terrace, Bingley. v 26

WANTED, Extractor, W.B.C. Hives, good condition, cheap.—RANDALL, 34, Station-road, King's Norton, Birmingham. v 27

1¼CWT. good Honey, at 46s. per cwt., tins and crates free; sample, 2d.—W. WHITE, Gas Works, Wilton, Salisbury. v 23

1910 PURE CARNIOLIAN QUEEN, imported through Mr. Sladen, price 6s.—WOOD, Ash Grove, Bishopton, Ripon. v 30

ALL Appliances, cheap clearance, giving up.—51, Lower Mortlake-road, Richmond, Surrey. v 32

SWARMS, May and June, guaranteed healthy, 12s. 6d.—L. W. MATTHEWS, Great Rollright, Oxon. v 31

SWARMS for sale, healthy, no disease, 2s. 6d. lb., box returnable, carriage paid.—MEPHAM, Orlestone, Ham-street, Kent. v 34

FEW fine healthy Swarms, to 10th June, 3s. lb.; also several very strong 4-frame Nuclei; May, 1910, Queen, £1; June fertile 1912 Queen, 17s.; county free I.O.W. disease.—R. MANLEY (Expert), Towcester. v 35

READY FOR USE, 6 racks Sections, Taylor's full foundation, 2 partly drawn out; also 6 sheets excluder, zinc, 22s. the lot.—CARVER, Castle Cary. v 36

SLADEN'S BEES.—Two very strong healthy Stocks, young Queens, nearly new Hives, 35s. each; Blacks, strong, 4-frame Nuclei, 1911 Queens, 16s. — BROOKS, Ashingdon Chase, Rochford, Essex. v 37

12-FRAME W.B.C. Hive, repainted, ⅞in. wood, rack, cover, section frames, &c., 15s.—56, Forest Drive West, Leytonstone. v 38

HEALTHY, natural Swarm, out May 8th, in skep, fine lot, I.O.W. unknown, carriage paid, 18s. 6d.—SHEPHERD, Redisham, Beccles. Member S.B.K.A. v 39

SWARMS WANTED.—Quote price per lb. delivered to Overton, Crawley. v 40

FOR SALE, 3 new bar-framed Hives, best seasoned wood, 10s. 6d. each unpainted; several good secondhand, 4s. to 6s., newly painted; would exchange for bicycle.—BROWN, 57, Spencers-rd, Crawley. v 44

WHITE WYANDOTTE COCK, 1910, prize winner, value 10s.; also pen prize laying strain Houdans, 17s. 6d., both Hunter's direct; exchange for healthy bees.—JONES, Berkeley, Glos. v 41

LARGE OIL RANGE, cook 10lb. joint; large dome cage, three divisions; hanging lamp, Duplex, lot 12s., on rail.—BROWN, 116 Brook Green, Hammersmith. v 43

STRONG NATURAL SWARMS for sale, 15s. to June 8th; after, 12s. 6d.; preference cash with order.—W. DENNIS, Brownsover, Rugby. v 45

FEW GOOD SWARMS or STOCKS WANTED, price, &c.—SHORT, Nisbet-street, Homerton. v 46

HONEY EXTRACTOR, 2 frame, the Guinea, 15s. 6d., with tap; Honey Extractor, 2 frame, 11s. 6d., good condition; Cottager's Wax Extractor, 2s. 3d.—MARRIOTT, 75 Sneinton Dale, Nottingham. v 47

MUST SELL, strong, healthy stock of English Blacks, on 10 Standard Frames, in Hive, complete, 30s.; two strong Skeps, 12s. each, all 1911 Queens.—WATSON, Pine View, Mildenhall. v 22

FOR HIRE, a "Herrod" demonstrating tent, 10s. 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand, W.C.

NEW Standard Frame Hives and Sections; exchange for Stocks or Swarms, English Blacks.—MOORHOUSE, Rothwell, near Leeds. v 11

FOR SALE, 3 empty Hives and accessories, good condition £1 the lot.—75 Moffatt-road, Thornton Heath.

FINEST LIGHT HONEY, granulated, 1lb. screw cap jars, 9s. doz.; good medium ditto, 8s. doz., and 28lb. tins, 14s. each; sample, 2d.—HOLLAND, Swanington, Norwich. v 3

1½CWT. light granulated Honey, chiefly from clover, in 14lb. tins, one tin rather darker, £4 15s., tins included, free on rail.—F. BROWN, Manor House Gardens, Sproughton, Ipswich. u 100

Editorial, Notices, &c.

"ISLE OF WIGHT" DISEASE.

The Board of Agriculture and Fisheries have just published a full report of the investigations into the nature, history, and symptoms of the "Isle of Wight" disease (*Microsporidiosis*). This is the third report published by the Board, and the investigations have been carried out by Dr. Graham-Smith, assisted by Dr. Fantham, Dr. Porter, Dr. Malden, and Mr. G. W. Bullamore. Full use has been made by Dr. Graham-Smith of the information collected in previous reports, and the present report is complete in itself. Most of the work has been done in the Pathological Laboratory, Cambridge, under the supervision of Dr. Graham-Smith. Although all known information on the subject of the disease is given in the report, and its connection with *Nosema apis* confirmed, there are many problems as yet unsolved, and arrangements have been made by the Board for the inquiry to be continued during 1912-13, and it is hoped that a further report will be published next year.

The report is a voluminous one, consisting of 143 pages, a great part being of a technical character: we therefore propose to give a digest of it at an early date. In the meantime we may state that it is shown that certain symptoms, such as inability of some of the diseased bees to fly, the presence of numerous bees crawling on the ground, and the gradual dwindling of stocks, are common, although other symptoms have been recorded, and that no one symptom is characteristic of the disease. The essential feature is the death of large numbers of bees. It is also shown that the disease is endemic, although it often passes unnoticed in mild seasons. It is further shown that infected water supplies are of great importance and may be means of transmitting the disease from bee to bee, and that moisture near hives contaminated with infected excrement is an especially potent source of infection. Nectar and pollen on flowers may become infected by foragers and so cause the infection of healthy bees. The fact is emphasised that in the production of this disease various factors are concerned besides the mere introduction of the infecting agent.

With regard to treatment and prevention, it is shown that drugs have met with little success, and that it is improbable that successful drug treatment will be found. The methods of prevention likely to prove of use are the provision of pure water supplies, the removal and destruction of all dead bees and infected materials, the disinfection of hives, the destruction of diseased stocks, the collection and burning of bees dying with suspicious symptoms, digging and disinfection of the ground round the hives, removal of healthy hives to a fresh site if possible, restocking after an attack, when this is necessary, with bees from an infected area, since such bees—if they have survived an attack—may be to some extent immune, although some months should elapse between the death of the last stock and the introduction of fresh bees.

The report (price 1s. post-free) may be obtained from the Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W.

Bee-keepers willing to assist in the investigation are requested to communicate with the Board, giving full particulars of any abnormal mortality among their bees, and the date when it was first noticed. In no case should bees, either alive or dead, be sent unless asked for, and then only in accordance with directions which will be supplied. Letters should be addressed to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W. Letters so addressed need not be stamped, but the words "Bee Disease" should be written across the envelope.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, May 16th, 1912. Mr. T. W. Cowan presided, and there were also present: Sir Ernest Spencer, Messrs. W. F. Reid, C. L. M. Eales, O. R. Frankenstein, J. Smallwood, R. H. Attenborough, A. Richards, J. B. Lamb; Association delegates: G. R. Alder (Essex), G. W. Judge, E. Smiles (Crayford), W. G. Fischer Webb (Croydon), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Messrs. E. Watson, G. W. Avery, E. Walker, T. Bevan, Dr. Lloyd Jones, Colonel H. J. O. Walker, Miss Gayton, and Dr. T. S. Elliot.

The minutes of Council meeting held April 18th were read and confirmed.

The following new members were elected: Mrs. E. Marshall Hall, The Coastguards, Eastchurch; Mrs. E. Ionides, Hadlow Down, Sussex; Miss F. E. Barker, Barnston, Dunmow; Mrs. F. H. Wolfe Murray, Dunsandle, Ashtead, Surrey; Mrs. L. Howard Vyse, Deanfort House, Kidlington, Oxon.; Miss L. Dimmock, 59, Corn Street, Witney; Mr. J. T. Cass, 7, Haxley Road, Selby; Mr. H. Hill, Ockbrook, Derby; Mr. T. Lewis, Wallbutton Road, Brockley, S.E.; Mr. A. Miskin, Ladds Court, Chart, Sutton; Rev. F. E. Crate, Salcott Virley Rectory, Witham; Mr. C. Pearse, Maiden Bradley, Wilts; Rev. G. W. Bancks, M.A., Hartley

Rectory, Longfield, Kent; Mr. C. E. Austin, Slinfold, Sussex; Mr. T. Brailsford, Crew, East Sheen; and Mr. C. A. Allen, Beaverdean, Oxshott, Surrey.

The Derbyshire Association applied for affiliation; it was resolved to grant the same if the Association agree to accept and abide by the conditions of affiliation.

The following names of delegates to the Council meetings were submitted and accepted: F. Ford (Barnet), J. Kaehler (Surrey), G. H. Garratt (Cheshire), J. Price (Cumberland and Westmorland), W. W. Faulkner (Leicestershire), E. F. Dant (Cambridge Mammoth Show), and Rev. G. E. H. Pratt (Shropshire).

The accounts were postponed till the next meeting, payments of £7 18s. being recommended.

The report of a Third Class Examination, held at Luton, was presented, and it was resolved to grant a certificate to Mr. W. P. Falle, "Le Vallon," Grouville, Jersey.

A hearty vote of thanks was passed to the Chairman for the trouble he had taken in obtaining and sending an illuminated address of congratulation from the Association to Monsieur Bertrand, Switzerland, on attaining his eightieth birthday.

The completed catalogue of the library was presented, with conditions relating to the borrowing of books. These may now be had by members of the B.B.K.A. free upon application to the Secretary; non-members may obtain these catalogues for 3d. each.

The report of the Board of Agriculture upon the "Isle of Wight" disease, which is a very exhaustive one, was handed round for inspection.

An application from the Grocers' Exhibition, London, for the medals of the Association, was granted. Mr. E. Walker and Mr. O. R. Frankenstein were appointed judges.

A letter was read from Mr. Garcke offering to keep the record cards for the Experimental Apiary at the Zoological Gardens, and it was resolved that the same be accepted with thanks.

It was resolved that Mr. D. M. Macdonald be appointed on the Examining Board for Second and First Class Examinations.

A letter was read from the Board of Agriculture definitely accepting the conditions and arrangements for the lectures and the Experimental Apiary of the Association at the Zoological Gardens, and a letter of thanks in reply was drafted; it was resolved to commence the work forthwith.

Sir Ernest Spencer, Mr. J. B. Lamb, Mr. A. Richards, and the Secretary were appointed as a committee to make preparation for the Experimental Apiary and necessary working of the same.

A letter of thanks was read from Monsieur Sevalle upon his election as an hon. member, also stating that he hoped to attend some of the meetings of the Association.

Next meeting of Council June 20th.

SURREY B.K.A.

ANNUAL MEETING.

The seventeenth annual meeting of the Surrey Bee-keepers' Association was held at the County Hall, Kingston, on Saturday, 27th April. Mr. E. C. Morley, C.C., occupied the chair in the absence of the President, Alderman W. Welch, J.P.

The Chairman, in moving the adoption of the report and balance sheet, said there were fifty-seven new members last year, though the total membership had diminished by five. They had reasonable hopes for better times both for their Society and for the bee industry in general in the near future.

Mr. Gibbons seconded the motion, which was carried.

Mr. Seth-Smith said that whereas in 1910 they had sixty-one cases of foul brood, there were only twenty-five in 1911, and that decrease showed that good was resulting from the Association's work. With regard to the sale of honey under the auspices of the Association, in 1910 they supplied 2,000 labels, but last year the number increased to 2,495, and that in spite of the fact that there were fewer stocks in the county and fewer members. Mr. Seth-Smith concluded by moving a hearty vote of thanks to the Surrey Education Committee for the grant of £150, and for the gratuitous use of rooms for Council and annual meetings.

Mr. Hedger seconded, and commended the go-ahead spirit of the Surrey Education Committee.

The vote was carried, and the Chairman acknowledged it on behalf of the County Council.

Thanks were also heartily accorded the various officers for their services during the past year, and the Executive Council was re-elected.

Mr. White mentioned that the management of the bee section of the Royal Counties' Agricultural Show, to be held at Guildford in June, had again been placed in the hands of that Association, and said it would be a great encouragement to the bee industry if they could make that section a marked success.

With regard to cures for the "Isle of Wight" disease, the Hon. Secretary said Admiral Swinton Holland, Vice-President of the Association, had reported success with one cure, and it was unfortunate that he could not attend the meeting that day.

Votes of thanks to the Hon. Secretary and to the Chairman concluded the meeting.—F. B. WHITE, Hon. Sec.

THE "ROYAL" SHOW AT DONCASTER.

Intending exhibitors at the above show should note that entries close on the 31st inst., and therefore no time should be lost in applying for schedules. The show promises to be a most successful one in many respects, and bee-keepers should endeavour to make the Honey Section worthy of the occasion.

REVIEW.

The Harvest of the Hives, by the Rev. Gerard W. Bancks, M.A., Hartley Rectory, near Longfield, Kent, price 6½d. post free.—In this pamphlet the author, after alluding to the consumption of honey in ancient and modern times, points out the vast waste of nectar owing to the insufficient number of bees to gather it, which is also detrimental to fruit growers from the blossoms not being properly fertilised. He gives a few good words of advice to commencing bee-keepers, and then briefly discusses the origin of honey, its composition, its value as a food and medicine, as well as its uses in the household. The pamphlet concludes with remarks on mead-making and honey vinegar.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

CURRENT WORK.

Many bee-keepers are a long way behind with the work in the apiary. First on account of the early season, which is quite three weeks in advance of any for a number of years past, and secondly through their unpreparedness by not following the advice frequently given in our columns to order the requisite bee goods in good time. We are informed by appliance manufacturers that they are overwhelmed with orders, and one firm informed us recently that they did not mind if they did not take another order for three months. They, too, are unprepared, as they anticipated few orders this season on account of the "Isle of Wight" disease, but instead of diminishing, the orders are far in excess of those for a number of years past.

Though inconveniencing many bee-keepers, this is encouraging, as it shows that the industry is far from being "wiped out" as so many prophesied.

The novice will have to use his brains to get the best results under the above conditions.

Where increase is desired it is quite easy to improvise temporary hives by utilizing boxes in which swarms can be accommodated until the hives ordered a week or two ago come to hand and can be painted. Great care must be taken to cover these well so that the rain, which is bound to come sooner or later, does not find its way in. These makeshifts should be placed, and the swarm hived, on the position that the bees are to occupy permanently.

All swarms when hived should be fed for at least a week with a bottle feeder, exposing about three holes. This will give the swarm a good chance of establishing itself, and will amply repay the trouble and time expended.

When it is desired to re-queen, this can be done inexpensively by making small nuclei from those colonies showing a disposition to swarm, taking care, however, to give a good ripe queen-cell and plenty of young bees. All the queen-cells should be removed from the combs remaining in the stock; this, with the slight reduction in numbers of bees and provision of more work by the three frames fitted with foundation to build out given to replace those removed, will check all tendency to swarm.

Already well-filled supers have been removed in those districts where fruit and sycamore has bloomed in profusion.

Where the supply of super foundation is running short, and it is necessary to put on extra supers in a hurry, it can be made to go further by using starters in the sections, instead of full sheets; although not a good practice it is better to do this and provide the bees with more room than to allow them to swarm.

Another matter which requires attention is the provision of room in the brood-chamber for the queen to lay. The extraordinary amount of nectar coming in has resulted in many cases in the bees filling up the brood-combs with food. Where such is the case the extractor should be brought into use, and three or four of the combs relieved of the honey by its means. When these are put back they will be quickly cleaned up and filled with eggs; so providing a large number of workers ready for the white clover harvest. Ventilation provided in the manner described previously in these hints, by blocking up the brood-chamber, will also help to check swarming.

Experts are now on tour in most counties, and I would impress upon bee-keepers the necessity of helping them as much as they possibly can. I am in full sympathy with touring experts, having been one of their number in the past, and I realise the difficulties under which they labour through the thoughtlessness and want of consideration of bee-keepers, and also by our variable climate. I cannot do better than repeat the points given in this month's RECORD for the careful consideration of members of associations.

1. You are only a unit in the Association.

2. Don't expect the expert to do spring-cleaning, &c.: his work is that of inspection and advice.

3. Don't expect him to call on a certain day and hour. He calls as near to the time advised as possible, but the weather alters from day to day and hour to hour, so that his arrangements are often interfered with.

4. Leave instructions for him in case he calls while you are out. Also leave your subscription to be paid to him, so saving yourself and the secretary trouble.

5. Don't imagine when he discovers disease where you did not suspect it that he has brought it.

6. Get a list of neighbouring bee-keepers who are not members, so that he can visit them and persuade them to join.

7. Remember he is human, and not a machine, and often is in sore need of food in places where it is difficult to obtain it.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ROSS-SHIRE NOTES.

PREPARING FOR THE HONEY-FLOW.

[8451] *Clover.*—While Southern bee-keepers complain of drought, here "the rain it raineth every day." Clover is making luxuriant growth, and bees are building up rapidly, but cold, rainy weather puts May blossom honey out of count.

So feeders are on and stocks being fed twice weekly with thin syrup. Where stimulation is required I am using a 5lb. cake of candy in a wired frame hung next the brood *à la Simmins*. Medium colonies on six or seven frames can be pushed on rapidly when syrup is supplemented by candy, and full sheets of foundation used to expand the brood-nest.

Strong colonies, where not doubled over winter, have been given a super of shallow frames with worker comb only, first filling each comb with syrup. Weaklings, luckily, are few. I had only one really hopeless case, that of a fairly good autumn colony mysteriously reduced by April to about twelve bees and a queen, with no brood. On making this unpleasant discovery I removed a broodless comb with adhering bees from my strongest stock, caged her majesty thereon, and shut up the lot overnight in a nucleus-box. Next day the queen was liberated, accepted at once, and began laying soon after. The strong colony was divided, half its brood being put in a spare body-box and both filled up with empty combs; then the queenless portion placed on top with excluder and a single sheet of paper between. By the following evening only young bees remained in the upper part, and they accepted the alien queen without demur. A later examination showed both queens laying busily, with only the excluder separating them. This dual-queen colony should turn out an immense population of foragers when the days come for honey-gathering.

Heather.—While the heather season of 1911 was a record one here, a retrospective view of results obtained reveals cases of individual colonies storing a heavy surplus of clover honey and then doing practically nothing at the moors. Some of my standard-frame colonies gave no saleable heather sections at all. The bulk of the heather crop was secured above shallow brood-nests, the best working stock of all having only nine shallow frames during August.

Some of these colonies had been made by hiving swarms in partly-stored shallow supers, and they did well on both clover and heather. If treating swarms in this way is effective as a cure, might it not also be worth trying as a preventive of swarming?—J. M. Ellis, Ussie Valley.

EXPERTS AND DISEASE.

[8452] I feel considerably interested in the correspondence which has arisen out of Mr. Woodley's remarks, and while disagreeing with him in his opposition to legislation, I cannot help thinking there is some risk in allowing a touring expert to examine one's bees. Of course, your esteemed correspondent is quite capable of defending his own opinions, and it would be presumptuous on my part to take up the cudgels in his defence, but with your permission I should like to state my own views with regard to this question of infection, though I am still open to conviction if I am wrong. Let me begin by saying that I have kept bees for nearly twelve years, and during that time I have lived in three different counties. My apiary has never numbered more than six stocks, and I have never had disease there or lost a stock from any cause whatever. I do not say this boastingly; it is simply my good fortune. I have always been a member of the association in whichever county I happened to be residing, and readily acknowledge receiving valuable assistance from the expert in my early days, when his timely advice probably saved one stock from starvation, and another from dying out, owing to a

failing queen. But now, although I still have much to learn, I have had, I think, sufficient experience to be able to avoid loss from causes such as those just mentioned, and I no longer consider the expert's visit indispensable. I have, then, to consider the desirability of receiving a visit or not. Put briefly, it amounts to this: The expert would probably be able to detect foul brood in my apiary in an earlier stage than I could. On the other hand, I run the risk of his introducing disease when my stocks are healthy. After careful consideration, I prefer to forgo inspection, although I have no reason to be ashamed of the condition of my apiary.

Let me say a few words about the danger of infection as I understand it. I have no wish to accuse experts either generally, or in particular, of carelessness. A touring expert necessarily handles, or at least inspects, diseased stocks, if he does not actually handle them. It is generally admitted that foul brood germs can be carried in one's clothing, and it may be the same with "Isle of Wight" disease. Even with the most careful of experts there must be some risk. I should particularly like to know if it is the general practice of experts to disinfect their clothing after examining diseased stocks, and how they do it. When I was unfortunate enough to have scarlet fever the sanitary inspector and his assistant, after disinfecting my room, sprayed each other all over as well, and yet, I believe, scarlet fever is not so infectious as foul brood.—A Small Bee-keeper.

STIMULATIVE FEEDING.

[8453] In those parts of the country where flowers do not secrete much nectar, bee-keeping for profit must be carried on on strictly scientific lines. It is well known that continuous stimulative feeding will produce in six or eight weeks' time a strong force of bees ready for gathering and storing the main crop of honey, and those who have not opened their hives for spring-cleaning purposes should do so at the first favourable opportunity. I do not like to stimulate to any great extent before I spring-clean, for many reasons; one is the fact that by doing so breeding will be under more natural conditions, and the brood and young bees will not be so liable to become chilled when the hives are opened, which sometimes happens, even though it may be warm (in your opinion) at the time. Again, if a stock has an early hatch of brood, and thundery weather becomes general, or it is warm in the sun with occasional cold winds blowing about ten days afterwards, many of the young bees are lost on their first flight. Bees use large quantities of food at this time of the year, and if you are located in a poor honey district you must keep the ball rolling when once you start stimulating, or you will do more harm than good, for a sudden stoppage of food will not only cause the bees to destroy the brood (which would probably become chilled in any case), especially after they had exhausted the greater part of their stores; this alone would cause a fall in the temperature of the hive by the increase of space, but will also cause the bees to work hard (if they do not become too disheartened to forage for themselves) for a scanty living, often of inferior food, which possibly might undermine the health of the whole stock, and invite disease. It is in these cases we find quantities of old bees dying off, those that gather and consume the most honey, possibly from the fact that they have lost most of the hair so necessary in the gathering of pollen, and after they have existed on honey during the winter months become an easy prey to disease through unsuitable food. It is quite possible "Isle of Wight" disease may have originated from starving bees or inferior food.—A Regular Reader, Birstwith.

CURING "ISLE OF WIGHT" DISEASE.

[8454] May I have the pleasure of saying a few words with regard to the prevention and cure of the "Isle of Wight" disease among bees? I have had a big fight with the malady during the last six months.

My bees gave me no trouble except from waxmoth during seasons 1909-10, and in the early part of 1911, but the dreaded "Isle of Wight" disease started to decimate my apiary in November, 1911. I will not say it was unexpected, but rather the reverse, because it was then rampant everywhere around my apiaries. I could not of course do any transferring of stocks in clean hives in November, but I started at once to use such remedies as were procurable. On "sunny" days I gave each stock a clean calico quilt, disinfected with Izal; I also painted over everything with diluted Izal, top bars of frames included, and then dug up the ground all round, and watered it with a very strong solution of carbolic acid. I had two apiaries three miles apart, and by February this year I had lost twenty out of twenty-three stocks at one apiary, and in the other I had lost one out of fifteen, and every other stock showed signs of the disease. I also used a great quantity of an advertised cure, which I obtained from Messrs. Jones Bros. before they left for New Zealand. I gave up all hopes of saving anything, as I could make no headway at all against the disease. I was always very careful to avoid carrying infection,

and washed my hands and boots in carbolic solution before I left one apiary to visit the other, and my assistant was strictly told to do the same, and I saw it was done. In March of this year I obtained some Ayles' "I.O.W." Cure, and treated all my stocks with it. I was very much surprised at the result, for it appeared to drive the infected bees out of the hives, and every stock commenced to show signs of recovery from this time onwards. I used a lot of full frames, on which the bees had died, to make up for short stores in these stocks, without, I am glad to say, infecting anything, and I have so been able to save seventeen stocks of bees, ten of which are now working in the supers.

I consider "Ayles'" Cure a great boon to bee-keeping generally, and while I keep bees I shall never be afraid of disease, for I am convinced that if it is used no germs of any disease can enter the hive and generate and live.—N. Allen, Hon. Sec., Andover and District B.K.A.

NEED FOR LEGISLATION.

[8455] A week ago, whilst recruiting for new members for the North Norfolk Bee-keepers' Association in Norwich City, I requested the address of a certain gentleman who has kept bees for eight years, and whose name was casually mentioned in conversation with some novice bee-keepers who twelve months previous to my visiting them had received a visit from him. He examined their hives at the beginning of the honey-flow, saw some lovely-coloured pollen in the cells, and declared it a bad case of foul brood; result: they promptly treated their bees on the starvation plan, burnt the interior, renewed the combs and frames, never medicated or gave antiseptic treatment, and they expressed their astonishment to me they had no honey. I examined their stocks, found them healthy and settled them down for winter, giving full instructions for the following spring. I also sent a letter or two of instruction and warned them to have nothing to do with their late adviser if he came again. They implicitly followed instructions, and last year took about sixty sections per hive from five stocks, and I have now secured these people as members of North Norfolk B.K.A. As the gentleman mentioned above is not a member of any Bee-keepers' Association, I wrote and asked him to join my association. He promptly agreed, and became a member without delay (after eight years' bee-keeping), and requested the pleasure of a visit from the expert to put some bees into an observatory hive which he had had made—a costly affair with batteries for recording sounds and understanding means of communication, &c. Altogether it is a lovely piece of work. When I arrived I examined with interest this wonderful observatory hive into which he wished me to put the bees, and then proceeded with the other stocks. The first hive we opened, out came my carbolic cloths, and after a preliminary puff of smoke I took out first frame of brood. I begged a match of my excited friend, and withdrew from a cell a coffee-coloured evil-smelling mass. The five frames of brood in this hive were in an abominable state. He was completely flabbergasted; all his past pleasure, expense, and future hopes were dashed to the ground.

We examined Nos. 2 and 3, which were worse. We then adjourned for tea, hoping that on resuming to find no more. We started with a stock of hybrids which attacked me viciously for a few seconds, and crowded up for fresh air in spite of the carbolised cloths, which was characteristic of them, but eventually we went through the lot and could gather together quite fifty frames of brood from the ten hives we examined—equal to the illustration in our "Guide Book." We retired to the workshop and store-room then, to find foul-brood dotted here and there in two hives that had been robbed out during the winter. The owner wished to save those bees, but I advised that the most humane, cleanest, and altogether best way out of the difficulty was to consign them to the flames. He agreed, and I left him at 8.30 p.m. with the foul-brood nightmare upon him. After I left he wired up a friend who had foul-brood slightly last year in his hives, but who now believes he is clear. Hearing this evidence gave him fresh heart, and with my aid he is going to try to cure them by medicine, antiseptics, burning of combs, cleansing of hives, &c.

I am one of the "germ-carriers" that Mr. Woodley talks about, spreading disease wherever we go. I might say that I very much resent past unseemly references to third-class experts, and from what I know of them they are, as a whole, the most practical class of people in the craft, and can generally be trusted to know their business. Every association can give testimony to their worth, and they are very often the driving force of an association. Does not my visit, as cited above, once more demonstrate the need for a Foul-brood Bill? I venture to say if some of the opponents of the Bill would let the poor third-class "germ-carrier" examine their stocks he would find some of them in the same state as those I have described above. There are several lots of bees within easy distance of the apiary mentioned above. What about them? We have no power to inspect until the Foul-brood Bill is safely in the harbour of the Statute Book.—W. E. W., Third-class Expert, B.B.K.A., Norwich.

BRIEF REPORTS.

It may be interesting to your readers in the Midlands to know that I began to take sections of honey on May 13th of this year, and have now nearly a hundred more sections ready. It is mostly hawthorn honey, that flower having been very plentiful in this neighbourhood. As far as my personal experience goes, this is a record for this part of the country.—A. W., Upper Winchendon, Aylesbury.

I had a fine swarm of bees to-day (May 14th). Don't you think this very early for such a high-lying place as Hedley-on-the-Hill?—R. M., Hedley, Stocksfield.

[In an ordinary season, yes.—Ed.]

I had an 11½lb. swarm yesterday, 11th, which I sold for £1 18s. 6d. I should like to know, through the "B.B.J.," if this is a record. The above is my fourth swarm this season; my first came off April 28th.—T. H. W., Hurstpierpoint, Sussex.

My apiary consisted of four hives. I fed with candy from January till April 12th, when I supered all hives, and under a colony of black bees I placed ten frames of foundation so as to get new combs. I left home April 15th, and returned May 13th. My gardener, who hates bees, took the first swarm (Carniolans) on May 6th; on May 13th this swarm was covering ten frames, each frame being more than half drawn out and a lot of honey collected. May 10th, two hives swarmed (cross-bred Italians); these were left in a skep and round box. On my return (May 13th) I dumped both these swarms in front of a "Conqueror" hive with commercial frames which they nearly filled, as they were both large swarms. I then took three supers off the three hives that had swarmed and secured fifty-four good sections, and six that had some drone-brood in, from the Carniolan hive. It appears to me that this year is going to be a good one.—J. D. A., Somerset.

The "Isle of Wight" disease has again roused itself to action in this district, many colonies having succumbed to its ravages. What stocks remain, however, are in splendid condition; of the four under my care, one has given a magnificent swarm, and the other three have their second supers on. These are from three stocks imported from the North last spring. Fully three weeks ago I took off the four small dishes in which candy had been given in absence of more suitable receptacles, full of exquisite comb-honey fit for anybody's table. I shall try it again on my strong stocks next year.—Geo. Steventon, Bisley.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Early Honey (p. 173).—Some fortunate individuals already report full supers, and in some instances full sections. I should like to emphasise Mr. Woodley's advice to super first with shallow frames. I should go further and use extracting frames for all this early honey. This tree honey is second-rate stuff, which makes excellent bee-food, but does not really attract upon the table. It would form admirable winter food if stored in suitable combs, or even if extracted and fed back. Some nice combs can be produced at the time of gathering, and if section racks are used, it might be for the purpose of getting worked-out sections for the clover-flow.

A Plea for the Skeppist (p. 174).—I am sorry to have fallen in the estimation of Mr. Hopkins. My plea was not, however, for the general use, but against the entire suppression. The skeppist will perhaps disappear, but whilst with us he serves the uses of more up-to-date bee-keeping, and is not, I venture to state, "dangerous to the best interests of the industry." I do not desire to go over the ground again, for the paragraphs on pp. 48 and 49 fairly state the case for the skeppist, as at present I see it. I note that Mr. Hopkins does not deal with the reasoning, but confines himself to general statements. New Zealand analogy does not help us much, for there is little comparison possible between the skep as we know it and the "box-hive" of which we have heard so much. The very strength of condemnation which the latter has received, in particular at the hands of Mr. Hopkins, puts it out of comparative range. I contend that the skep is not less sanitary nor more prone to disease than the frame-hive, and I do not agree that it is impossible to discover and control disease under skep management, even were the fixed-comb skep the only type of hive in use.

"I.O.W." Disease (p. 175).—I wonder whether Mr. Mason is on the track. The evidence he offers is stimulating, if incomplete. Even if it could be proved that wax secretion were a necessity, the argument as to the evil of abstinence from comb-building would not necessarily be sound. For there is no true similarity between "milk" and "wax" production. The respective organs are dissimilar, and there appears to be no difficulty in voiding surplus wax scales. I doubt whether the statement will bear investigation, that after swarms are loaded with wax which they must use for comb-building. Bees voluntarily festoon and cluster for wax-production, thus courting the increase of temperature which Mr. Mason appears to regard as the cause of trouble. It may be that bees which can exercise all their functions are prone to health, and that restriction conduces to disease, but we cannot overlook the presence of the micro-

organism peculiar to the disease. Its existence, and the consequent weakening of the colon walls, is alone sufficient to account for the stoppage. Even if wax were present in the colon it would, at the temperature of the body, be in a soft or fluid state, and not in the condition in which it would appear upon dissection.

Burning-out Hive Corners (p. 182).—It should be easy to fit a directing nozzle to the lamp in such a way as to deflect and flatten the flame. The corners would then be accessible, and the general work of the flame might be improved.

Starters in Sections (p. 184).—I very much doubt whether Mr. Mace really makes a "saving" by the use of starters only. Allowing for slower work, poorer finish, and attachment, a possible change of base, with the further possibility that the drone comb may be reserved for breeding, it is more than doubtful economy. In any case, comb-building from new wax is necessary when thin foundation is used, as there is an insufficiency of wax for the full comb in the sheet.

The Cause of Death (p. 184).—I suppose it would not occur to the operator to attribute to the attention he gave the "wild" swarm in summer its demise in the subsequent winter!

Queries and Replies.

[8329] *Queens and Fertile Workers.*—I have a section-rack which was used for a stock which I had to destroy last year; it is now fitted up with fresh sections. (1) Should I disinfect? (2) Would one part formaldehyde (such as you get from chemists) to three parts of water do, and the foundation and rack be syringed with this? The tin slots were washed with boiling water. (3) How can one tell a genuine queen from a fertile worker? or (4) queens hatched out of queen-cells, but raised from larvæ, and not from hatching-eggs?—F. H. Wolfe-Murray.

Reply.—(1) Yes, disinfect. (2) You had better obtain the formaldehyde from this office; we can guarantee it, but cannot do so for other people's preparations. (3) Queens are easily distinguished from workers by their size; a laying worker is not different in appearance from the other bees. (4) So long as the larvæ are not more than three days old the queen will be all right. If reared from larvæ more than that age the queen will have a similar appearance to a normal one, but will be faulty in her work of reproducing.

[8330] *Hives on Scales.—Steam-heated Uncapping Knife.*—Will you kindly answer the following questions through the pages of the "B.B.J."?—(1) Is it necessary to wash honey-tins when they come straight from the makers before putting honey in them? (2) I have been much interested in reading of the method of keeping one or two hives on scales, like Mr. Alexander in America and Mr. Mace in England, and should much like to do the same. What type of scales are used for this purpose; what price, and where could I get some? (3) What is the lowest power objective to study the bacteria of bee diseases? Is an oil-immersion lense absolutely essential? (4) What appliance-manufacturer sells the apparatus for steam-heating uncapping knives? I thought they were usually heated in hot water. (5) Would perforated zinc be suitable to make a honey strainer from?—X. Y. Z., Kent.

Reply.—(1) Certainly. (2) Any ordinary scales upon which the hive can stand will do. (3) A 1-12th oil-immersion is absolutely necessary. (4) We cannot give the name of an English firm manufacturing such a knife. The one used by Mr. Cowan was made by A. Tonelli, and a full description was given in "B.B.J." for August 22nd, 1907. The cost is about 16s. 6d. (5) It is much better to use either a tinned wire cloth-strainer or muslin.

[8331] *Storing Syrup in Brood-combs.*—Early in April I transferred my bees into clean hives, and as they were in a very filthy mess I burned everything except one or two frames of young brood in each stock. I then filled up the hive with full sheets of wired foundation and began feeding the bees with medicated syrup. On making an examination the other day I found all the foundation beautifully worked out and nearly all filled with syrup. Kindly say if I am feeding too fast; also should I stop feeding now?—Alexr. Bruce, Forfars.

Reply.—You have evidently fed too rapidly. Do not give any more food, and we would advise you to extract the syrup from one or two combs to provide room for the queen to lay.

[8332] *Observatory Hives.—Foundation in Sections.*—Will you please tell me if an observatory hive placed in a room about 24ft. from the ground will be too high? I should also like to know why the bees are so reluctant to start working on sections fitted only with starters. I gave them a rack fitted in this way, and there happened to be an odd section with a full sheet of foundation. They immediately started drawing that one out, but have not touched the others.—H. Coppeard, Kent.

Reply.—The observatory hive should get on all right in the position you describe; you should, however, provide a good wide alighting-board. Bees work best in sections fitted with full sheets of foundation, because the warmth is conserved and also the surface for them to walk up reaches right down to the tops of the frames where they are working.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-keepers' Association. Schedules from F. B. White, Hon. Secretary, Marden House, Redhill, Surrey. **Entries close May 20.**

June 12 and 13, at Romford, Essex. In connection with the Essex Agricultural Society, the Essex Bee-Keepers' Association will hold their Annual Show of Honey, Wax, Bees, and Appliances. Schedules from G. R. Alder, Hon. Sec., 176, Hainault-road, Leytonstone. **Entries close May 31.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13 July.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. Schedule, &c., from James H. Hadfield, Hon. Sec., Lincs. Bee-Keepers' Association, Alford, Lincs. **Entries close 14th June.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

Cambridge Mammoth Show, 1912.—Sections for Horticulture, Bees and Honey. Schedules of prizes for the above Sections are now ready, and can be obtained of the Sectional Secretary, as under. Schedules will be sent to all 1911 Exhibitors, who need not apply. Free spaces offered in Horticultural Section to Growers for Trade Runs. E. F. Dant, Sectional Hon. Sec., 17, Sussex-street, Cambridge.

TRADE CATALOGUES RECEIVED.

F. W. T. Sladen (*Ripple Court Apiary, Dover*); tenth edition.—Mr. Sladen's reputation for queens and bees is well known; a full description of these is given in this catalogue, together with his queen-rearing appliances. A speciality is made of the exportation of bees. The list may be had free upon application.

H. Cressy (*Friary Mill, Dorchester*).—This is a neat little catalogue of bee-keeping and poultry appliances, a novelty being a bee house for three stocks of bees. May be had post-free on application.

Notices to Correspondents.

J. R. W. (Kilburn).—*Tuition in Bee-keeping.*—We can only advise you to advertise in our pages for what you require. An experimental apiary is to be established by the B.B.K.A. in the Zoological Gardens, Regent's Park, where the tuition will be free.

J. L. (Merton Park).—*Death of Queen and Stock.*—The bees you send are very dry, therefore we cannot give cause of death with certainty. From your explanatory letter we should say it is a case of dwindling through the queen being prevented from laying in the autumn by a superabundance of food in the combs.

T. L. (Southport).—*Wild Bees.*—The bees are of the species *Andrena*, but which family it is impossible to say, as they were saturated with honey. It would be no use trying to get their stores.

P. C. D. (Chippenham).—*Queen of Swarm cast out by Bees.*—(1) The queen was evidently injured in some way, probably through fighting. (2) She is a fertile queen.

Miss B. Shepherd.—*Packing Bees.*—See page 118 of the "British Bee-keepers' Guide Book" for instructions in packing bees.

J. D. (Sanquhar).—*Wild Bees.*—The bees are *Andrena Longipes*, a species of wild bee common in this country. They are not injurious to hive bees.

R. W. (Hitchin).—*Foul Brood Cure.*—The contention is absurd. You might as well put a healthy person to bed with a patient suffering from small-pox or other highly infectious disease, and say he will not contract the complaint.

W. J. R. (Market Harboro').—*Section-foundation.*—We prefer No. 2 sample. Comb when newly built has a white appearance. The foundation, whichever sample is used, will not be observable in the sections when completed.

Suspected Disease.

Novice.—The comb is affected with foul brood.

E. M. (St. Asaph).—The bees were in a very decomposed state, so we could do nothing with them. From the description you give we should say they have died from suffocation.

G. H. (Alfreton).—The comb is affected with foul brood.

Peterston.—Comb is affected with foul brood. You should not have put the letter on the comb, it was in a vile mess, and scarcely readable.

G. E. M. (Leicester).—Pieces of comb for inspection should always be packed in a tin box for protection in transit. Your sample was so badly crushed through neglect in this matter that an examination was impossible.

E. M. J. (Reading).—The bees show signs of "Isle of Wight" disease.

DOUBTFUL (Worcester).—Five out of seven of the bees have their wings badly dislocated, and there are also other signs of "Isle of Wight" disease.

C. E. E. (Manor Park).—We can find no trace of disease in the bees sent.

E. H. C. (Worcester).—Apparently you have used naphthaline in excess; there is no disease whatever.

T. D. (Myrthyr Tydvil).—It is the first stage of foul brood. As the stock is so weak you had better destroy it at once, disinfecting as previously directed in our pages.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

SURPLUS SWARMS; also several strong 4 frame Nucleus, 1911 Queens, £1 each.—MOFFAT, Manse-road, Wishaw, Lanarkshire, Scotland. v 74

WANTED, cheap Extractor, small Ripener, with strainer and tap, pair W.B.C. uncapping knives.—STILEMAN, Grasscroft, Elmhyrst-road, Weston-super-Mare. v 73

4 GLAZED SHOW-CASES, shallow frames, also 2 to hold six sections, 1s. 9d. each, 9s. lot; young fertile Queen, Black, 3s. 6d.; wanted, geared extractor.—WHEATLEY, Spa-road, Hinckley. v 71

4 FINE HEALTHY STOCKS OF BEES, in exceptionally good new hives, all young prolific Queens, with lift and shallow frames, 35s.—WINKWORTH, Pangbourne, Berks. v 69

OBSERVATORY HIVE, takes 3 standards, 4 sections, revolving base, mahogany colour, packed free, 25s.; trophy stand, 3ft. panelled mahogany base, 4 plate shelves, packed free, 25s.; three shallow frame cases, handsome designs, in box for travelling, 6s. 6d.; above articles guaranteed perfect condition. — HUBBARD, 105 Kirby-road, Leicester. v 61

WANTED, steady young Joiner, well up at bee-hives or similar work, good at machinery and quick, bee-keeper preferred; give full particulars.—REDSHAW'S, South Wigston, Leicester. v 59

SWARMS, healthy, few spare, May 3s., June 2s. 6d. lb.—ANDREWS, Longthorpe, Peterborough. v 49

PRIME SWARM, from healthy English Stock, 1911 Queen, free on rail, 12s. 6d.; first P.O. accepted.—HEAD, Brilley Vicarage, Whitney, Hereford. v 52

SEVEN good 14 standard frame Hives, complete, 7s. each, flat top; 12 Skeps, from 1s. each.—H. GOY, late W. Fletcher, The Apiary, Grindleford, Sheffield. v 53

FOR SALE, Castle Bee-house, take five stocks, cost £15, size 6ft. by 6ft. by 2ft. wide; particulars and photo on application.—VINCE, Dursley-rd, Trowbridge. v 55

BORAGE PLANTS for Bees, 20, post free, 3d.; Chapman's, same price.—STEVENS, Churchill, Oxfordshire. v 56

SURPLUS QUEENS; 1912 Blacks, fertiles, 4s. 6d.; virgins, 1s. 6d.; 4-frame Nuclei, 1912 Queen, 15s. 6d.—V. SHAW, Betula, Fallow Court-avenue, North Finchley. v 57

GIVING UP BEE-KEEPING.—Rapid Feeder, 1s.; 3 stimulating feeders, 2s.; smoker, 1s.; uncapping knife, 1s. 6d.; scraper knife, 1/-; W.B.C. section rack, with frames, 1s. 6d.; section clearing board and excluder, zinc, 1s. 6d.; wire embedder, 9d.; "The Honey Bee," 1s.; 200 "Bee Journals," 1903-7, 2s.; carriage extra.—GREENING, Eversley, York-road, Woking. v 58

HIVE OF BEES FOR SALE.—Derby Lodge, Bedfont, Middlesex. v 60

EXCHANGE cock and pullet, pure Silkies, for Swarm Bees, sell 15s.—HEAL, Holcombe, Bath. v 63

STRONG STOCK BEES, in Standard Hive, 15s. 6d.; also stock on 9 combs 12s.; surplus shallow-super combs, straight and clean, 3s. dozen; 5 Taylor's Hives, new last season, 4s. 6d. each; 6 dozen new shallow frames, 5s.—R. JOHNSON, Little Hinton, Swindon. v 68

WANTED for the season, a qualified Assistant in the Apiary, one with a knowledge of joinery preferred.—Apply, by letter only, stating qualifications, age, and wages required, to CHARLES H. BOCOCK, Ashley Apiaries, Newmarket. v 67

WANTED, geared Extractor, good condition, cheap.—Particulars to 19, Avenue-road, Isleworth. v 66

SURPLUS STOCK, from large Apiary, guaranteed healthy; 12 excluders, 3s. 6d.; racks of shallow frames, drawn out, 5s. 6d.; 200 brood frames, 5s. 6d.; 50 drawn out ditto, 15s. 6d.; 12 dummies, 1s. 6d.; 20 section racks, mostly full sheets and drawn out combs, 35s.; 2 20-frame Wells hives, 12s. 6d. each; 8 10-frame hives, 3s. 9d. each; honey ripener, with strainer, 7s. 6d.; 2 frame extractor, 12s. 6d.; 50 quilts, 5s. 6d.; feeder, 1s. 6d.; veil, 6d.; 200 metal ends, 2s. 6d.; in small lots if required; state wants; June swarms, 12s. 6d.—MULLIS, The Grange, Staplecross, Sussex. v 64

LADY'S good Cycle, 15s.; Camera, £3 12s. 6d.; Kodak, 25s.; Zither Banjo, 15s., cash, bees, or honey.—COX, 92, Beaumont-road, Bournville. v 19

FEW June Swarms for sale; stamp for reply.—DAVIS, Snakesbury House, Newington, Sittingbourne, Kent. v 15

1910 PURE CARNIOLIAN QUEEN, imported through Mr. Sladen, price 6s.—WOOD, Ash Grove, Bishopton, Ripon. v 30

FOR HIRE, a "Herrod" demonstrating tent, 10s. 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand, W.C.

NEW Standard Frame Hives and Sections; exchange for Stocks or Swarms, English Blacks.—MOORHOUSE, Rothwell, near Leeds. v 11

FINEST LIGHT HONEY, granulated, 1lb. screw cap jars, 9s. doz.; good medium ditto, 8s. doz., and 28lb. tins, 14s. each; sample, 2d.—HOLLAND, Swanington, Norwich. v 3

BUSINESS ADVERTISEMENTS.

STRONG healthy Stocks of English Black Bees, on wired frames, 25s.—WHEATON, Exton, Topsham, Devon. u 91

3000 PURE FERTILE QUEENS to be sold during season; Blacks, Carniolans, Italians, 4s.; Americans, Swiss, 5s.—FREDERICK VOGT, 32 Selwyn-avenue, Higham's Park, Essex.

Editorial, Notices, &c.

SUSSEX B.K.A.

ANNUAL MEETING.

The fourth annual meeting of the above association was held on Wednesday, May 8th, at the Royal Pavilion, Brighton, under the chairmanship of Dr. A. Chalmers Peskett.

The Chairman, in proposing that the report and balance-sheet be adopted, stated that the association was in good condition, the balance in hand having increased by £7 from the previous year; this was considered satisfactory, especially as the four years that the association has been established have been trying ones for many bee-keepers.

Two points of special importance were referred to: The first honey show, which it is hoped will be an annual event, and the inception of a journal for the members at a nominal cost, and it is hoped that these may receive the support of all the members. Mr. Tickner Edwardes seconded, and the motion was carried.

Mr. Capelin proposed a vote of thanks to the committee and officers, which was seconded by Mr. Sandalls, who mentioned the great benefit he had derived from membership of the society, especially the instructions of the expert.

On the proposition of Mr. C. A. Overton, seconded by Mrs. Bissett, the President (the Marquess of Abergavenny), the vice-presidents and the committee (with the addition of the Rev. A. C. Atkins (Hove College, Hove), were re-elected, and a vote of thanks was accorded to Mr. W. Hill Hunter, A.C.A., for his past services, and he was again elected as hon. auditor.

The Chairman moved the re-election of Mr. C. A. Overton as hon. secretary, and said that he filled the position well; he also remarked that Mr. Overton would welcome a colleague, who could go about the county and get in touch with the county gentry and members of the County Councils to enlist their interest in the society.

Mr. Tickner Edwardes seconded, and the resolution was carried unanimously.

Mr. Tickner Edwardes proposed the re-election of Mr. C. T. Overton as expert and lecturer, and in doing so said Mr. Overton's bee-keeping experience, as well as extending over twenty-five years, had also been progressive, and the Chairman, in seconding, said that it was well known to members, and the association was very grateful to him for his services.

Referring to the proposed legislation, Mr. Tickner Edwardes said the Board of Agriculture had the matter in hand and the present proposal was to pass an Emergency Bill to deal particularly with the "Isle of Wight" disease, and probably order compulsory destruction, but he did not know if compensation would be paid or not.

A letter was read from the Diseases of Bees Committee of the British Bee-keepers' Association, and on the motion of Mr. Tickner Edwardes, seconded by Mr. C. T. Overton, the following resolution was carried:—"That this Association is in favour of legislation for the better prevention of bee diseases and regulation of the industry generally." A vote of thanks to the Chairman closed the meeting.

The Hon. Secretary, Mr. C. A. Overton, "Beecroft," Crawley, will be pleased to send a report and particulars of membership to any who are interested.—*Communicated.*

SHROPSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of this association was held at the Mayor's Court, Shrewsbury, on May 5, under the chairmanship of Mr. Roff King.—The Committee in their annual report said that they had a satisfactory balance-sheet to present, and that the outlook for the future of the association was promising.

The balance-sheet showed that the receipts totalled £77 7s. 5d., and of this sum a balance in hand of £20 was received from last year's account. The members' subscriptions came to £14 7s., and a donation of £30 from the Shropshire Horticultural Society was received. The balance in hand was now £23 14s. 4d. The report and balance-sheet were adopted.—The Mayor (Major C. R. B. Wingfield) was re-elected president, and the committee were re-appointed, with the addition of Mr. Strang (Mountfields), while Mr. Roff King was re-elected chairman of the committee; Mr. Holland, hon. treasurer; and Mr. S. Cartwright secretary. The Rev. G. Platt was re-appointed representative of the association to the British Bee-keepers' Association.—The Rev. D. E. Rowlands drew the attention of the members to the Foul Brood Bill that was now being brought before Parliament. He said that the Bill seemed to him to be an exceedingly fair one, and one he thought which deserved all their support. He moved that the following resolution be adopted:—"That the members of the Shropshire Bee-keepers' Association unanimously support the Disease of Bees Bill now drafted by the British Bee-keepers' Association, and ask the local members of Parliament to use every endeavour to secure the passing of the Bill into law as soon as possible."—Mr. H. W. Hughes seconded the motion, which was carried unanimously.—On the motion of the Rev. D. Rowlands, it was decided to approach the County Council asking them to include the subject

of bee-keeping among the subjects they supplied for lectures in the county.—S. CARTWRIGHT, Hon. Sec.

NECTAR PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

(Continued from page 173.)

No. 17. CURRANT (*Ribes rubrum nigrum*).
NAT. ORDER. *Ribesiaceæ.*

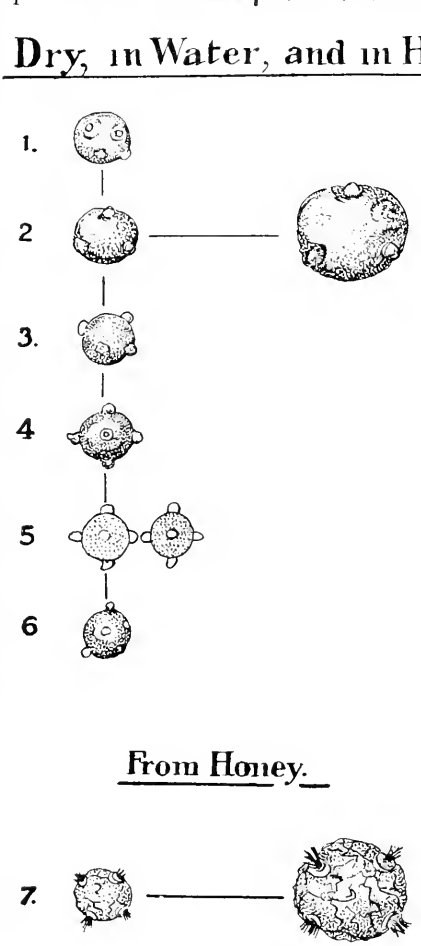
The generic name is a word meaning currant, whilst the specific titles *rubrum* and *nigrum* mean respectively red and black. *Ribes rubrum* has red berries when wild, varying in cultivation from red to white.

The currant being amongst our fruit-bushes and yielding as it does a fair amount of early nectar, though not so profusely as the gooseberry (*Ribes grandularia*), deserves a place in our list.

The currant was formerly erroneously supposed to be the degenerated Corinthian grape. It is now known to be a native of this country, the red being found growing naturally in many places, both in England and Scotland, the white being really only a variety of the red.

The white currant, having a more delicate flavour, is most in request for dessert and for converting into wine, which, by using only the juice of fine fruit, and without any addition of spirit or water, may, when kept to a proper age, be made equal to some of the inferior wines from the grape.

The red currant is used principally in the preparation of jellies, and is amongst the most valued of British fruits for pastry. It is easily preserved, and grows in sufficient abundance to offer a cheap luxury to the humblest class. In various parts of the country I have seen it growing against the walls of cottages, where it forms the principal ornament to a neat dwelling; its rich dark sharply-cut leaves and brilliant fruit growing over latticed windows offer almost as pleasing a picture as do the vine-clad dwellings of Italy. Such plants often attain large dimensions. There is a specimen growing at Beeston at the present time which covers the whole gable end of the dwelling, and reaches to a height of at least 20ft. Such sights, however, are not so common a feature as they used to be, owing to the inroads commerce makes upon many of our villages and the consequent migratory tendency of the inhabitants.



POLLEN OF CURRANT.

The black variety is used chiefly for wines and jams, whilst from the latter a very pleasant drink is made for invalids. The pollen grain is unlike any we have so far considered, for it has no fewer than six processes, or double the usual number. For a long time I was unable to satisfy myself that this was a fact, for it is the only pollen that I have so far come across with that number. On first looking at the enlargement of No. 2 my readers will probably remember having seen one something like it, and if they will turn to the drawings of the Lime (*Tilia Europæa*), "B.B.J.," July 13th, 1911, page 273, they will notice that at first sight it does somewhat resemble it when only three of the processes are visible. When dry it measures about $\frac{14}{1000}$ in diameter. By reflected light it is almost white, whilst by transmitted light it appears of a pale yellow colour. Its form is as shown in the different positions one to six, and this is

retained when it is either dry or first placed in water, honey, or oil.

The lowest number of processes that can be seen at a time is three, as at No. 2, with its enlargement, and this is the form in which it generally appears; the largest number being five, as seen at Nos. 4 and 6, but in this case the top of one is visible, while the sixth will be immediately underneath. No. 5 shows the two hemispheres of a grain, the centre process being at the top in one and underneath in the other.

When taken from honey it has a wrinkled and somewhat deformed appearance, the processes have mostly become ragged, and in some, owing to the absorption of moisture, the fovilla may be seen escaping.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

TYPES OF BEE-KEEPERS.

"THE NOVICE."

[8456] Every bee-keeper of any experience should have a novice attached to him. It is good for the expert to have such an attachment, for it reminds him of his own novitiate days, when his progress could be likened to that of a child beginning to walk. He is too apt to forget such times and to imagine that he always has been what he now is. But in the novice stumbling and tottering along the path to apicultural success, he sees, if he will take the trouble, but his younger brother in the craft, though, it may be, a potential expert, and one who will perhaps make history in the bee-world. Then help that novice, for the novice of to-day is the expert of the future. Elijah's mantle will again fall upon Elisha.

Such a novice I first saw as an interested spectator on the safe side of the net of a bee-tent. Interest developed into the closest attention when the demonstrator and lecturer enlarged upon the good which bees do in a fruit garden, and held out the hopes of increased yields of apples and pears, plums and damsons. For my novice had an orchard, and therefore began to speculate immediately in pounds, shillings and pence, as to what a stock of bees would do for him and his annual returns of fruit. Thereupon questions innumerable for the patient lecturer. "Will the bees sting?" asked the novice. "Oh! but they don't sting you because they know you." Then the necessary ocular demonstration to prove to the novice that the bee is no respecter of persons, but along with that a further demonstration of the way in which bees can be safely controlled.

Such seed sown in suitable ground could not fail to bear fruit, and after a winter of careful thought, and calculation as to cost weighed against probable gains in yields of fruit (for profits from honey did not seem to enter into the question at first), my novice decided to purchase some bees and make a start. A six-frame stock was obtained from a local bee-keeper. Thereupon further questioning and cross-questioning—such questions as would require the wisdom of a Solomon to answer. "How much honey shall I obtain this year?" "When do you think I shall get a swarm?" It was rather late in the season—June, in fact, and the novice had to receive his first lecture on the innumerable uncertainties, coupled with the glorious possibilities of the bee-keeper's craft. It was pointed out to him that he must choose between the chance of obtaining a very late swarm and that of procuring a small amount of honey. Honey was chosen, and the kindly season of 1911, backed up by an honest value in the queen, provided a substantial surplus. My novice was satisfied. His experiment had paid him. This year he works his stocks himself, and is beginning to obtain an idea of the interior economy of a hive. No longer does he confound brood with honey or worker with drone brood, although stored pollen proved a puzzle at the last manipulation. A sting is a badge of glory.

"Then will he strip his sleeve and show
his scars."

He points with pride to his plum-trees already laden with swelling fruit, and gives credit to his little helpers. He is carefully examining his apple trees, from which the blossom has just disappeared, and thinks he already sees signs of help from his little friends.

Such is my novice, but in reality his name is legion. Judiciously helped, and judiciously left alone, he will become a credit to his craft, and will carry on the good work when the older craftsmen "have shuffled off this mortal coil."—D. WILSON.

THICK V. THIN FOOD FOR STIMULATIVE FEEDING.

[8457] One of the great faults of bees at the moors in the North, especially if the weather is alternatively hot and cold, is that they often neglect or leave the supers altogether, after working in them for

awhile. This is always unsatisfactory, as it means not only a loss financially, but also the choking up of the brood-nest and consequent stoppage of breeding, which is disastrous to the safe wintering of the stock. The cause of this is probably the lack of the moist warmth that causes the bees to cluster together. Frequently, when you take your bees home and remove the whole of the honey, giving empty combs in place of the full ones, and commence feeding, you will find the queen will start laying again, and if the bees are very strong and you put a drawn-out super on (a plan which is not to be recommended), the bees will often fill part of the super, even though the weather may be as cold or colder than when the bees were at the heather. Now, if the bees neglected the supers at the heather, why should they work in them later on when not at the moors? It is generally known that moist heat may be caused by a number of animals congregated together in a building or place that has no proper ventilation, and in the case of the bees, though the temperature at both periods might be the same, the thinner syrup-food would cause more respiration, perspiration, and condensation in the hive, which would bring on a moister and more oppressive atmosphere. This would have a more stimulating effect on the bees than if they were fed on thick food, such as heather honey. Some bee-keepers contend that heather honey is just as stimulating a food as any other kind of honey: to those I should like to put a question: Is the nectar from trees and shrubs as dense when the sap is flowing as it is when the wood is ripening if the nectar of early flowers is of a thinner nature? It must be part of the bees' instinct, inbred from generations back, that causes the bees, both queen and worker, to take advantage of that flow, or of similar artificial food, such as syrup. Now if this is the case, and early flowering native flowers produce a thinner honey than those blooming late in summer, thin nectar in spring must be the best, in more ways than one, and especially for stimulation. Bees carry quantities of water into the hives early in the year; now, if thick honey is best for stimulating, why do bees risk their lives by drowning in order to procure that precious fluid? It cannot be for cleaning purposes, for they do what is required in that respect with their jaws, nor can it all be for themselves, or they would be able to exist on water if circumstances compelled them to do so; so it must be either for help to dissolve candied food, which they do not seem to do, or for the brood, which is the most likely. Bees know better than we do which is the best kind of food they can procure, and the condition the food should be in for their various uses. There is just one more point some of us may overlook during an erratic honey flow—that bees, knowing that they will be at a disadvantage if their winter stores are not concentrated, often remove the little surplus stores they have gathered and put it into the most convenient place for use (the brood nest) and seal it over for winter consumption.—REGULAR READER, Birstwith.

VAGARIES OF QUEENS.

[8458] On April 17th I took from a fairly strong nine-frame hive the queen, three frames of brood, and a frame of honey. I inspected the remnant for eggs on May 9th but found no sign of queen or of a queen-cell having been built. Another inspection on May 13th and another on May 15th also disclosed no sign of eggs. On May 18th I took away four frames of honey and extracted about 10lb., not returning the combs. The bees were now on four frames, and I added in the middle a newly drawn-out frame of eggs, notched for queen-cells. By May 15th the bees had had twenty-nine days to produce a laying queen. On that very day she must have begun to lay, for when I looked for queen-cells on May 27th the comb of foreign eggs was sealed all over, and two other combs were also sealed. There were certainly drones flying on May 5th, when the queen ought to have been about five days out of the cell and ready to fly. I suppose it took her some fifteen days in first-rate weather to make a successful wedding trip, or else she was a long time capable of laying but indisposed to do so.—G. G. DESMOND, Camberwell.

TREE HONEY, AND OTHER TOPICS.

[8459] Mr. Crawshaw's "Cappings" appear to me to have been sent off in too great a hurry this week. Had he allowed a little time for thought to ripen the honey, it would have been of better density.

I must take decided exception to the condemnation of tree honey as "second-rate." These last two years I have been favoured with an abundance of sections of pure hawthorn honey, and, without exception, the many people who have tried it pronounce it far superior to that from clover. There is an erroneous belief that all these tree honeys are very dark. Hawthorn honey is certainly on the dark side, but is, nevertheless, of very rich, bright appearance.

That from apples, on the other hand, is extremely pale in colour. This year I have a distinct novelty in the shape of holly honey. It, too, is very pale, but of excellent density, and allowing for a slightly peculiar twang, which some people like,

but others do not care for, the flavour is right. So far at least as the flowers of the *Rosacæ* are concerned, I doubt whether any honey is superior.

Moreover, even admitting that honey obtained early in the season is inclined to be of a mixed character, I do not see that the matter is remedied by putting it in larger combs. When split up in sections there is a much greater chance of its being kept separate, and, when it comes to colour, the section is far less handicapped than extracted honey. It is only during a strong flow from one particular flower that we can be sure of getting pure honey in a shallow frame. I do not know anything of Mr. Crawshaw's locality, but is it possibly a case of "The fox and the grapes"?

Starters.—Then with regard to the use of starters: Mr. Crawshaw makes it appear that I am an advocate for these. The reverse is the case. What I tried to make clear was that I was able to use up this little strip (which would otherwise be useless) and at the same time provide work for those bees who have wax they are eager to dispose of. It is one thing to put a whole rack of starters on a hive, leaving a cold, empty chamber without attraction for the bees, and quite another to put nearly all drawn-out sections and full sheets with half-a-dozen starters. As to the amount of wax used, it is easy to settle that. A full sheet of "Weed" super foundation weighs 70 grains, the built-out comb from it approximately 140 grains. The starter strip weighs 12 grains, so that when working on a full sheet the bees have to provide 70 grains of wax and from the starter 128 grains. Unless the foundation is waxed in all round, the bees have to attach it just as much as natural comb, and I doubt whether many have time to wax foundation in all round. Personally I do not find such a wonderful difference in the finish from a starter as from a full sheet, when the starter is a strip that runs across. It is different when a small piece is used in one corner. As to a change of base, this matters little unless for show purposes, and, indeed, those customers who do not care for much wax are better pleased with drone comb. It is not necessary for me to point out how breeding may be prevented in the sections. The veriest tyro knows it. After all, it is entirely a matter of applying common sense to the conditions. In the early part of the season we want the supers as warm as possible and we therefore put in drawn-out sections and full sheets. In the height of the flow the requirement is in the other direction, and starters provide plenty of space for the thronging crowds.

The last "capping" is intended, doubtless, as a mild joke, but I can assure the capper that my attentions did not extend to cutting the combs or killing the queen. The hole in the tree was in the middle of a substantial poll, and the entrance was about 2in. diameter. My operations consisted in endeavouring to auger-bore a 1½in. hole through the wood above where I judged the swarm to be located, with the ultimate object of smoking through the lower hole and driving the swarm out through the top one. After boring through three inches of solid oak in a position where it was almost impossible to get any purchase on the auger, and getting apparently no nearer the chamber, I thought it time to rest my arms. They ached for days afterwards.

Scales for Hives.—I notice a correspondent wants to know what sort of scales I use for weighing colonies. May I point out that those upon which a hive will stand are by no means "ordinary"? If one went into a hundred shops where scales are used, I doubt if ten would be found that would weigh more than 56lb. The best form for the purpose is a platform scale on the steel-yard principle, such as is used at railway stations. These, however, cost about £3 to £4 and, moreover, being entirely of metal, would soon be ruined if kept where rain or mist could reach them. Portable coal scales will do, but these cost nearly as much, and the hives have to be lifted on to them. Moreover, they do not turn very well when fully loaded, and it is essential that at least ¼lb. should be indicated. As a matter of fact, I do all my weighing with a beam scale of my own construction, which cost me only about 5s. If you think it would be of general interest, I should be very pleased to give you a short article with diagrams. [We should be glad to have it.—Eds.] If expense is no object with your correspondent, Avery of Cowcross Street, Smithfield, would be able to fit him up.—HERBERT MACE.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

What Goes With Bees.—Mr. Hutchinson would have laconically said "More bees!" Others would suggest "Better bees." Yet others "Bees better kept." *Gleanings* says, "We would recommend poultry-raising, because no other so nicely dovetails with bees. The two lines do not interfere with each other. A poultryman is generally busy early in the year, and little is to be done by the time bees require special attention. Then fruit-growing goes very well with bees. Several of the early bee books made a strong point of the close relationship between bees and orchards, and I believe the D.A.T.I. in Ireland are

now keeping up the association. Flower-culture is one of the most pleasant, and, rightly gone about, one of the best paying of our minor cultures, and it goes hand in hand with apiculture. Then the one is an aid to the other. Mr. Root lately advocated duck-rearing as one of the industries which went specially well with bees. Honey-selling should be carried on as a side issue by many favourably situated. A bee-keeper told me that he disposed of a large quantity of honey thus at a profit of over 25 per cent. clear.

Finally crofting, or small-holding, will work admirably with bee-keeping. The small-holder is ever nigh his bees, his time can be easily portioned out between their care and other duties, and he has generally special facilities for disposing of his honey and wax. With co-operation much more may be done in this line.

Value of Bees.—Mr. Root, lately addressing an audience of bee-keepers, made the following statement: "Bees produce annually $20,000,000 worth of honey, but their economic importance to the fruit-grower and the consumers of fruit in this country could be measured by five times that in the production of more and better fruit and better crops." Thus he estimated that the bees' value to the country as pollinators would be worth $100,000,000. Our fruit-growers set a very high value on the honey-bee, and if we see the projected Act a reality, it will be largely owing to the estimation in which bees are held as pollinators.

Value of Foundation.—Estimates have often been made as to the amount of honey consumed by the bees in making 1lb. of wax, and these have run from 10lb. to 20lb. While complete accuracy cannot be obtained, the latest experiments would go to show something like 12lb. as the best estimate.

Mr. Crane says, "According to these figures, furnishing an eight-frame hive with full sheets of foundation would save the bees the necessity of making 1lb. of wax that would take them 12lb. of honey to produce. This, even at 10 cents, would be worth $1 20c., or twice what the foundation costs, and yet some bee-keepers think they cannot afford it." Add to this the precious time taken up by the bees in working out the thousands of cells made from this 1lb. of wax, and further add to this the more precious destruction of tissue such hard labour entails, and we have a very strong case for the liberal use of foundation.

American Bee Journal.—This well-known bee newspaper, the oldest on the American Continent, has just changed hands, Mr. George W. York, who has been proprietor and editor for over twenty years, having disposed of it to that well-known bee-keeper, Mr. C. P. Dadant. The new owner has been long and favourably known not only in America but on the Continent. An able and fluent writer on apiculture, Mr. Dadant has edited and very largely re-written "Langstroth on the Honey Bee" and Newman's "Bees and Honey," both excellent works on our interesting pursuit. Readers of the "Old Reliable" will be glad to learn that Dr. Miller—young at eighty-one—still remains as associate editor.

Mr. Greiner points out a peculiar feature connected with bee-manipulation: "I placed my head where flying bees were thickest, even kneeling close to the hive under operation, and the pesterers left and gave me no more trouble. A visitor standing back some feet had to retire hastily." Mr. Greiner concludes that if positions had been reversed, results might have been different. He concludes that his immunity depended mainly on his being in the "hive atmosphere" when he was unmolested. The peculiar vision of bees may also have had something to do with his safety. His "masterly inactivity" when bees offered to test his nerves would also count considerably.

African Straws.—The treasurer quotes the Latin proverb "*Bis dat qui cito dat*"—Treasurers nearer home would feel that he who gives quickly gives twice. When writing to advertisers the Editor says, "Mention you saw it in the *Journal*." Home bee-keepers follow the good example. Mr. Oettle considers as an "urgent need" that bee-keepers should demand the attention of the Agricultural Department. Press not only for that but a *grant*. Take a leaf out of the book of the Canadian, New Zealand, and Australian apiarists!

"*Canadian B.J.*"—This journal supplies the titles of leading articles in the most important English bee newspapers all the world over. This is a good idea and worthy of being imitated. Mendelism is dealt with in the April issue. As far as bees are concerned I fear the time is not yet ripe!

Mr. Morley Petit, in his annual report, concludes, "The greatest hindrance to the honey industry is not foul brood; it is not the cold winters and late springs, and it is not the difficulty of controlling swarming. It is the *indifferent* farmer who does not realise that while good horses, fat steers, and other animals will eat their heads off if he does not watch them, honey bees are too much bother to look after. Yet," he adds, "the latter, if attended to, will yield from 50 to 100 per cent. profit on outlay! What other stock on the farm will do the same?"

Queries and Replies.

[8333] *Swarming Difficulties.*—In your issue of March 28th you kindly advised me *re* giving bees more room. Since then, acting on that advice, my bees have worked out and filled four frames of foundation. As I could not give more room (the hive being full) a large swarm issued last Sunday, the 5th, and after some difficulty I secured them, and have them safe in another hive. My difficulty was: the swarm formed five separate clusters, so that I could not get a skep under the lot. What I want to know is if I had waited longer would they have formed into one cluster? This being my first experience I was over-anxious not to lose them and secured them within half-an-hour of their leaving the old hive, and while some hundreds of bees were still flying. (2) Will you let me have the address of a Bee Association I could join near here where I could meet men with experience to get more knowledge from? Thanking you for previous help.—H. M. C., Isleworth.

Reply.—(1) You did the right thing under the circumstances; but why did you not put on a super when the brood-chamber was full, in order to give more room? (2) The Secretary of the Middlesex B.K.A. is Mr. W. Herrod, 23, Bedford Street, Strand, London. You had better join this.

[8334] *Dividing Stock in "Wells'" Hive.*—I should be much obliged if you would tell me through your journal, which I take in regularly, if the following method of dividing would be satisfactory:—I have a Ford-Wells hive with one side only occupied, the stock is very strong, there being twelve frames filled with brood and stores, and also a super, which is also being worked by the bees. I propose taking some of the frames from the side occupied and placing them in the empty part together with the queen, leaving the others to raise their queen themselves. It is, of course, impossible to alter the position of hives, as is usually done in dividing, owing to the fact that the two are made as one.—T. B. H., Birmingham.

Reply.—We do not think you will be able to get the colony to rear a queen by the method you propose. You might divide as you suggest, and after twenty-four hours introduce a fertile queen to the queenless portion, though even in this there is a certain amount of risk.

[8335] *Dealing with Queenless Stock.*—At the end of April, when spring-cleaning one of my stocks, I cut out one nearly perfect queen-cell and one half completed, then found the queen dead on the floor-board at the finish—balled, I concluded. On May 2nd the expert came round; he said the bees were trying to supersede their queen. He could not find a queen or queen-cells, so gave them a frame of eggs from another stock. To-day, on examination, I found only a few capped drone and worker brood right at the top of the frame put in by the expert; the others were filled with honey. What should I do? Will the bees raise another queen from eggs if they have a drone-breeder or fertile worker? This was a disappointment, though I found a few completed sections on this stock. The next stock was very encouraging. It was one found badly affected with foul brood on May 2nd, but is now covering seven frames with huge patches of healthy brood, and new wax and honey, after following the "Guide Book" treatment.—B., Lewes.

Reply.—You should have examined the comb put in by the expert to see if the bees built queen-cells. No doubt they did this, and a queen has emerged. To make quite safe, put in another comb with eggs.

[8336] *Swarm in a Wall.*—Last week a swarm came out of one of my hives and before I could secure it established itself in the hollow wooden wall of an old building. I tried by boring holes in the inner wall and blowing in smoke, and by tapping the wall, to get them out; a great many did come out, but they would not go into the skep, and eventually all returned into the wall. I have not tried again to move them, as there has been too much wind. It is very difficult to put the skep over the place where they go in and out, as it is right up under the eaves of the building. If you could give me any advice as to how to proceed to secure them I should be most grateful.—J. A. G., Sussex.

Reply.—The only way will be to remove some of the boards inside the building where the swarm is, and get them out with the hands or a ladle of some kind, into a skep. Unless you secure the queen they will not remain in the skep.

[8337] *Irregular Combs — Excessive Drone-rearing.*—(1) I have some old wooden frame hives full of bees which were evidently hived without properly wired foundation. The frames are full of comb, so twisted and contorted that it is impossible to remove them without breaking up the comb. How should this state of things be treated? The hive is not in sections or supers, the roof part of the hive only being removable. (2) All my hives have a lot of drones; would it be an advantage to kill some of them, and if so, how had I better catch them?

Reply.—(1) You had better cut a hole in the floorboard of the hive and transfer

the bees to proper frame hives, as described on page 149 of the "British Beekeepers' Guide Book." (2) If you transfer the bees and use full sheets of foundation, it will do away with the excessive number of drones; it is not much use trapping them, as others will be reared in the drone comb, which is evidently too predominant in the old hive.

[8338] *Supering.—Transferring from Skep to Frame Hive.*—I shall be glad if you will help me with the following: I have two hives which will take fifteen frames in each; I should like to know which will be the better of the following methods: (1) To use a queen-excluder in place of the dummy and put in two hanging supers with six sections in each, or (2) put the dummy after the tenth frame, and place a rack of sections on top of them? I have two skeps with strong stocks in each. Is it too late to transfer them to frame hives? The holes in the top of the skeps are very small. Could I cut a larger hole with a sharp knife and place a super on the top of them?—BEEHIVE.

REPLY.—(1) Use a tight-fitting division-board, and confine the bees to ten frames, then put on the super. (2) It is the right time now to transfer. It will be much better to do this than to super the skeps, though it can be done after having first enlarged the hole as you suggest.

[8339] *Corrugated Paper for Smoker.*—I observe that corrugated packing paper is in use for producing smoke in bee-bellows. Is it better if medicated, and if so with what chemical?—F. V. H., Buxted.

REPLY.—Ordinary corrugated paper makes good smoker fuel if made into rolls so that the corrugation will run parallel with the barrel of the smoker; it should be used without any dressing upon it.

[8340] *Mouldy Combs.*—I find that the outside combs in some of my hives are mouldy, otherwise the hives are in a flourishing condition. Should these combs be destroyed, or is it safe to return them to the hives?—E. T., Durham.

REPLY.—If there is only a little mould, the combs will be quite fit for use, but if they are very mouldy it will be best to melt them down and replace with foundation.

[8341] *Extracting Unsealed Honey.—Spacing Frames.*—(1) Is it practicable to extract from shallow frames before they are sealed over? and, if so, is there any quick method of ripening the honey? I am, of course, well aware that this method would require very frequent visits to the hives, but it seems to me this would be compensated for by the ease of extraction, and the consequent larger amount of surplus honey. (2) Why should frames spaced 1¼in. to prevent the building of drone comb be re-spaced before brood is sealed over? (*vide* "Guide Book.") I hived a swarm this way on frames fitted with starters and forgot to re-space them. I now find five frames filled with sealed-over worker brood; a little drone comb has also been built which is also sealed over. The comb is also much straighter than when frames are spaced 1½in. apart. In fact, the combs are the straightest and nicest I have yet had.—E. F. LEDGER, Lee.

REPLY.—(1) No; it has been tried, and proved a failure. No method of ripening honey is as satisfactory as letting it ripen on the hives. (2) To allow the bees to pass more freely over the comb and also to enable more to cluster over the brood at night in order to keep it warm.

[8342] *Transferring from Skep to Frame Hive.*—I have two skeps of bees. A fortnight ago I put ten frames fitted with sheets of foundation into a hive and on top placed a board with a 6in. hole cut in the centre, and placed on this a skep and wrapped up very warmly. When is the queen likely to be down in the frame hive? Should I remove the skep and later on place a super on the hive, or should I put queen-excluder under the skep and leave it on as a super? In one skep I noticed bees carrying out some white grubs, which I guessed to be chilled brood, caused perhaps while handling the skep when placing it over the frame hive. Do you think that is a correct surmise?—E. TAYLOR, Liverpool.

REPLY.—It is difficult to say how long the bees will be in working down; much depends upon the strength of the stocks and the weather. An examination will enable you to see when the queen has gone below. You can then put on an excluder and allow the skep to remain as the super. Yes, no doubt the young bees thrown out were chilled.

[8343] *Eucalyptus as a Bee Subjugator.*—(1) I have a few hives of Italian bees, and wishing to drive them from the top of brood-box frames, before placing on the super, I sprinkled a piece of rag with oil of eucalyptus, then laid it on top of the frames; the bees instantly fled, it apparently being extremely objectionable. Has the use of eucalyptus any deterrent or injurious effect on bees or honey? (2) Is eucalyptus in use as a subjugator? (3) Is it necessary to use queen-excluder when working for sections? (4) Under what conditions will the queen use the super for breeding?—G. R., Doncaster.

REPLY.—(1) We should not use eucalyptus, as it will taint the honey. We have also found it make the bees vicious instead of subduing them. (2) No. (3) Not absolutely necessary, but advisable. (4) When the combs below are full of brood.

[8344] *Returning Swarm.*—I shall esteem it a favour if you will kindly enlighten me, through the "B.B.J.," on the following: I am hoping my bees will not swarm this year, but in the event of their

doing so, if I take the queen away from the swarm, can I return it to the parent hive, and how?—G. F. B., Mansfield.

REPLY.—You can return the swarm to the parent hive after having removed all the queen-cells but one. The swarm should be returned to the hive in the evening in the same way that a swarm is hived into a new home.

"ISLE OF WIGHT" DISEASE.

[We are requested by a prominent bee-keeper in the Isle of Man to urge bee-keepers there not to import bees, &c., from the mainland, so as to keep at bay the "Isle of Wight" disease, which, up to the present, has not been seen in the island. We are sure all interested will pay attention to this warning.—ED.]

Bee Shows to Come.

June 4, 5. and 6, at Droitwich.—Hereford and Worcester Agricultural Society. Show of Honey and Bee Appliances. Apply for schedules to A. Elliott, Cusop, Hereford.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-Keepers' Association. **Entries closed.**

June 12 and 13, at Romford, Essex. In connection with the Essex Agricultural Society, the Essex Bee-Keepers' Association will hold their Annual Show of Honey, Wax, Bees, and Appliances: Schedules from G. R. Alder, Hon. Sec., 176, Hainault-road, Leytonstone. **Entries close May 31.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13th July.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. Schedule, &c., from James H. Hadfield, Hon. Sec., Lincs. Bee-Keepers' Association, Alford, Lincs. **Entries close 14th June.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

Cambridge Mammoth Show, 1912.—Sections for Horticulture, Bees and Honey. Schedules of prizes for the above Sections are now ready, and can be obtained of the Sectional Secretary, as under. Schedules will be sent to all 1911 Exhibitors, who need not apply. Free spaces offered in Horticultural Section to Growers for Trade Runs. E. F. Dant, Sectional Hon. Sec., 17, Sussex-street, Cambridge.

WEATHER REPORTS.

WESTBOURNE, SUSSEX.

April, 1912.

Rainfall, ·09 in.	Minimum temperature, 30 on 12th.
Below aver., 1·68 in.	Minimum on grass, 26 on 12th.
Heaviest fall, ·05 in., on 9th.	Frosty nights, 5.
Rain fell on 3 days.	Mean maximum, 58·1.
Sunshine, 268·3 hours.	Mean minimum, 38·5.
Above average, 90·8 hours.	Mean temperature, 48·3.
Brightest day, 23rd. 13·2 hours.	Above average, 2·2.
Sunless days, 1.	Maximum barometer 30·445 on 3rd.
Maximum temperature, 69 on 22nd.	Minimum barometer, 29·633 on 1st.

L. B. BIRKETT.

BARNWOOD, GLOUCESTER,

April, 1912.

Rainfall, ·18in. on 4 days.	Percentage of cloud, 38.
Below average, 1·42 in.	Prevailing winds, N.E. and N.W.
Heaviest fall, ·08in. on 2nd.	Percentage of wind force, 15.
Total to date, 10·25in.	Barometer, daily mean, 30·18; highest, 30·48 on 3rd and 23rd; lowest, 29·58 on 9th.
Above average, 6·06 in.	Remarks.—A month of remarkably fine weather, with excess of sunshine. Bees flying freely on every day except 3. There were practically no April showers. Very wide range of temperature owing to sunshine, and numerous severe frosts at night. Vegetation about 12 days in advance of the normal.
Mean maximum temperature, 58·5; 1·5 above average.	
Warmest day, 22nd, 70·5.	
Mean minimum temperature, 35·8; 6·2 below average.	
Coldest night, 11th, 23·5.	
Mean temperature, 47·1; 2·4 below average.	
Relative humidity, 69 per cent.	
Sky completely overcast on 4 mornings at 9 a.m. Cloudless on 6.	

F. H. Fowler (F. R. Met. Soc.).

Notices to Correspondents.

J. M. G. (Ayrshire).—*Wild Bees.*—The insects are wild bees (*Andrena fulva*) common in this country.

BEGINNER (West Suffolk).—*Transferring from Skeps to Frame Hives.*—You should allow the skeps to remain until

the combs are full of honey, and it is sealed; then they can be removed and the section rack put in place.

W. S. (Altofts).—*Moving Bees in Summer.*—(1) You can move the bees to the position indicated by the line, but not more than one yard per day, and that only when they have been flying during the previous day. (2) July 3rd, 4th, and 5th are the days when demonstrations will be given at Doncaster Show. (3) We have sent particulars of insurance. (4) Secretary of Yorkshire B.K.A. is Mr. W. E. Richardson, 14, Carter Mount, Whitkirk, Leeds.

T. H. H. (Walthamstow).—*Spreading Brood.*—(1) The bees are the ordinary English variety. (2) Yes, certainly. (3) You must not spread the brood until all the combs upon which the bees are confined by means of the division-board, are covered with bees, and then only one new frame at a time should be inserted.

J. J. (Cowbridge).—*Naphthaline.*—If crude naphthaline is used it will asphyxiate the bees; it is safer to avoid risk of this by procuring the proper kind from this office, as it is specially prepared for use in the hives.

J. E. J. (Pontardulais).—*Sugar for Bees.*—The sample you send is not the right kind of sugar for bee food; you should not use moist sugar for this purpose.

Suspected Disease.

J. C. (Chorlton).—The combs were badly crushed, but so far as we could see contained nothing worse than chilled brood.

Honey Samples.

Yorks (Bradford).—The sample is not pure heather honey, though the heather flavour predominates. It is not good enough in quality for the heather class, and is too rich in heather flavour for the blend class. The rough granulation will go against it a little.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

SWARMS English Bees, 3s. per lb.—W. DENNIS, M.W.B.K.A., Brownsover, Rugby. v 76

APPLIANCES, cheap clearance, giving up.—51, Lower Mortlake-road, Richmond, Surrey. v 77

ILFRACOMBE (Devonshire).—Florence Villa Boarding Establishment; close sea, bathing, separate tables, from 25/-.—RICHARDS. v 78

FOUR DOZEN finest quality Sainfoin Sections, 10s. dozen, carefully packed.—NORTH, Cressing, Braintree, Essex. v 80

2 CWT. of very finest light Clover Honey, in 14lb. tins, 60s. per cwt., tins free; sample, 2d.—W. E. CURPHEY, St. John's, Isle of Man. v 82

"W.H." WAX-MOULD, large size, perfect, 1s. 6d.; 2 Uncapping Knives, 1s. 6d.—MISS GRIFFITHS, Brynaber, Abergele. v 85

EXCHANGE, 8 Hives and day to week old chicks for motor cycle, or sell.—BECK, Airton, Leeds. v 86

½ CWT. good light Honey (candied), in lever-top tin, accept 26s., on rail.—WEAVING, Chipping Norton, Oxon. v 87

SURPLUS 1912 Queens.—Black, fertiles, 4s.; Virgins, 1s. 6d.; strong 4-frame Nuclei 1912 Queen, 14s.—V. SHAW, Betula, Fallow Court-avenue, North Finchley. v 88

FOR SALE, 20 racks of Shallow Combs, good condition 4s. each; Hives, Racks and Excluder, 6s. each, or Bees, healthy.—TOLWORTHY, Freckenham, Soham. v 89

TWO W.B.C. Section-Racks, only used once, 5s.—JOHN BROOKFIELD, 108, Stamford-road, Birkdale. v 90

HEALTHY stock of Native Bees, on ten frames, fit to super, 25s.—H. GRIST, Shepton Mallet. v 91

A BARGAIN.—Two W.B.C. Hives (Howard's make), with two 7in. lifts; three W.B.C. Hives, with one 7in. lift; 6 hanging Section Racks, complete; 6 shallow-frame Racks, hives newly painted; the lot for £3 15s. to clear, all in good condition, or sell separately.—COVERDALE, Market Place, Pickering. v 92

FOR SALE, 10 Stocks of Bees, Black, strong, in W.B.C. pattern hives; 6 Swarms in skeps; all clean and healthy.—POYNTER, Oakland-terrace, Whitchurch, Hants. v 93

FINEST Heather-blend Honey, 1lb. bottles, 9s. doz; half gross, £2 5s.—COWLAND, Bovey-Tracey, Devonshire. v 95

RYMER HONEY PRESS, as new, Meadows, 39s.; W.B.C. hanging Frame Section Boxes, complete, 3s.; Lee's Racks and Sections, 2s. 3d.; Lees' shallow Frames and Racks, 2s. 3d.; three W.B.C. Uncapping Knives, 1s. 9d. each; "B.B.J." Excluders, 6d.; Bottle Feeders, 9d., new; W.B.C. Hives, complete, 12s.; Lees' Holborn ditto, 6s. 6d.; good Hives, Standard frames, 4s. 6d.; all clean; state requirements.—W. WOODS, Normandy, Guildford. v 94

THREE SURPLUS VIRGINS for 3s. 9d.; 1s. 6d. each.—LEDGER, 35, Leyland-road, Lee, S.E. v 75

SURPLUS SWARMS; also several strong 4 frame Nucleus, 1911 Queens, £1 each.—MOFFAT, Manse-road, Wishaw, Lanarkshire, Scotland. v 74

SEVEN good 14 standard frame Hives, complete, 7s. each, flat top; 12 Skeps, from 1s. each.—H. GOY, late W. Fletcher, The Apiary, Grindleford, Sheffield. v 53

FOR SALE, Castle Bee-house, take five stocks, cost £15. size 6ft. by 6ft. by 2ft. wide; particulars and photo on application.—VINCE, Dursley-rd, Trowbridge. v 55

Editorial, Notices, &c.

RECOGNITION OF MONSIEUR ED. BERTRAND.

This veteran bee-keeper attained his eightieth birthday on May 16th, having been born in Geneva in 1832. The day was celebrated in a manner befitting the occasion, and the *British Bee Journal* and British Bee-keepers' Association joined with the Continental Bee Journals and Associations of Bee-keepers and other friends in offering this eminent man their congratulations and best wishes.

M. Bertrand started and published the *Bulletin d'Apiculture de Suisse Romande*, later called *Revue Internationale d'Apiculture*, and conducted this for twenty-five years, during which time he practically revolutionised bee-keeping in Switzerland and France. Old-fashioned hives almost entirely disappeared and rational methods were adopted by most bee-keepers. His activity did not rest there, for he gave courses of instruction at his own residence, where the theory and practice of rational bee-keeping were imparted, and in this way he formed a band of disciples who spread the new methods throughout the country. He published many pamphlets, but his principal work, "Conduite du Rucher," has passed through ten editions and has had a very wide circulation, having been translated into seven languages. Eminent scientists and practical bee-keepers of the first rank met at his hospitable residence in Nyon, and were welcomed by Madame Bertrand, who was such a helpmate to her husband, and always did her best to make their visits pleasant. It is, therefore, not surprising that on the occasion of his celebrating his eightieth birthday M. Bertrand should have had his services recognised in such a hearty manner, and we are pleased that Madame Bertrand was also able to share in the homage paid to her husband. The following letter which we have received so well describes what took place on the day that we print that portion of it referring to the festivities:—

Dear Mr. Cowan,—The celebration of M. Bertrand's fête has been a great success, and he was not too fatigued, but much appreciated the expressions of sympathy which he received on his attaining his eightieth year. On the morning of the 16th I went from Geneva to Nyon to congratulate our dear friend. Monsieur and Madame Bertrand were at breakfast reading the numerous letters received from friends, and seemed very happy, being quite ignorant of the fête that was in preparation for them. They returned with me to a family dinner at Florissant. At half-past three the invited relatives and intimate friends began to arrive, and as it was raining they had to remain in the salon. It was then that I handed him your letter and the illuminated address which you sent. The children, in honour of the hero of the fête, sang and recited poetry alluding to various episodes of his life and sojourn at Cergniemin. It was very touching to hear these young voices proclaiming the eulogies of M. Bertrand. After tea J. Olivier read a number of letters received from Swiss and French bee-keepers and friends, subscribers of the *Revue d'Apiculture*, also letters of congratulation to and appreciation of the author of the "Conduite." There was a very fine one from Maeterlinck, another from M. de Candolle, president of the Society of Arts of Geneva, others from the residents of Gryon, &c.

The Société Romande d'Apiculture sent an album containing the photographs of its members from its commencement, accompanied by a letter from its president, M. Gubler, and a gold medal struck for the occasion. Dr. Kramer also wrote on behalf of the German-Swiss Bee-keepers' Association. At six o'clock Monsieur and Madame Bertrand returned to Nyon, taking with them their numerous letters and presents. It was a most charming fête, and I cannot say how happy I feel that it should have passed off so well and given so much pleasure to our dear friend. Madame Bertrand had a joyful day, and it was right that she should have been present at the triumph of her husband, which she could share with him.

L. Martine.

Geneva, 22nd May.

The address alluded to above presented by the B.B.K.A. to M. Bertrand, who is an honorary member of the Association, was illuminated on parchment. It had a border of clover and other bee-flowers, and in the corners and interspersed were representations of queen and worker bees. In a vignette at the bottom there was a modern frame-hive standing in a field of flowers. The following was the inscription:—

THE BRITISH BEE-KEEPERS' ASSOCIATION.
Presented to
MONSIEUR ED. BERTRAND,
on his attaining his eightieth birthday, in recognition of his great services to apiculture, congratulating him on having seen realised during his honourable life the fruits of his teaching, and hoping that he may be blessed with good health during the remaining years of his life.

Thos. Wm. Cowan,
Chairman.

London, 16th May, 1912.

In a private letter, alluding to these festivities, M. Bertrand says: "I have

been completely spoiled on my birthday, much more so than I merited. In a general way I must be thankful for my fate, for I have succeeded in my enterprises, and have retained all my faculties, and above all I have a dear and excellent wife who cares for me and comforts me in my failures."

M. Bertrand, in looking backwards, has the satisfaction of knowing that his labours have not been in vain, but have been crowned with a success that few have the privilege of realising. This must add happiness to the evening of his life, which, we trust may be prolonged for many more years.

BEEKEEPERS' ASSOCIATION FOR SCOTLAND.

A public meeting called "to inaugurate a Beekeepers' Association for Scotland" was held on May 25th in one of the classrooms of the Edinburgh and East of Scotland College of Agriculture—the Rev. J. W. Blake presiding. At the outset the Chairman said they were there that day to see if they could set on foot a National Beekeepers' Association. He thought they were all agreed that it was a very desirable thing that in the interests of beekeeping there should be some central association which would have a connection with all the bee men in Scotland, and stimulate those who were already engaged in this industry, and induce others to take it up. It was agreed to form a Scottish Beekeepers' Association, and the meeting proceeded to draft the rules and regulations.—*Communicated.*

AMONG THE BEES.

By D. M. Macdonald, Banff.

WHERE TO STAND WHEN MANIPULATING.

When handling frames it is important that the manipulator should know where it is exactly best to stand. I explained this lately to a novice, but noted that his face showed some signs of doubt or trouble. It seems he had read his "Guide Book" carefully, because he went inside for a moment, returning with a copy, his finger inserted at page 102; and he rather triumphantly pointed to line ten—"stand in rear of the entrance." My young friend read into this "in rear of *the hive*," whereas if he had glanced at the illustration facing he would have seen that both examiner and examinee stood at *the side*. Our old friend, W. B. C., is shown in the same position on pages 98 and 101 when examining combs as he takes them from the hive. These illustrations are a great boon to the novice who studies his "Guide Book" intelligently. A glance shows him the best position for each successive manipulation he finds it necessary to carry out in course of the active bee season.

Now, turn to pages 61, 160, and 199, where the same operator may be seen standing *behind* the hive while he is taking surplus racks from the bees. That is the natural position to occupy, and the one where every movement tells best. The roof and coverings go to one side, the racks and smoker stand to the right hand, and the operator to the rear. Thus the supers are off or on before the bees do more than realise that they are being dealt with, coverings are replaced smartly, and the roof laid over all in the shortest of time. To do this it is advisable to have a clear space behind. I detest carrying out this operation from the side when necessity compels in a badly-arranged apiary.

On pages 30 and 106 we have two other illustrations well worth careful study. When hiving bees, a home swarm, a travelled swarm, or a driven lot, it is permissible to stand facing the hive while shaking them from the skep or box on the platform, but this accomplished, stand to one side—the side on which the operator kneels (page 106) when watching the united lots. The young lady on page 30 was wisely placed—for photographic reasons—facing the beholder, and makes an excellent picture, as thus seen. For actual demands in hiving bees, however, she would feel her movements freer and her right hand less impeded, when guiding or directing the bees, if she were facing the other way. The evening sun, too, I feel certain, would cast its rays on the bees in a way which would aid her in spotting the queen—a very important point in hiving any bees in a new hive. By the way, when examining combs, always turn your back to the sun, so that the comb may be "illuminated" by its rays. Mr. Carr is thus shown on page 137 searching for the queen, which he is seen picking off the comb. For this act he has placed the frame on the hive with the object of giving his right hand freedom of motion to seize the queen between the forefinger and thumb; but in examining the combs (see pages 98 and 101), he stands erect with the frame on a level with his face, the very best position in which to stand to do the work under the most favourable circumstances. The drift of my observations can be appreciated if a close study is given to the beautiful tone block illustration on page 102. The free comfortable pose spells "a pass" in my reading of the picture.

When I started I meant to devote about a score of lines to my first point, but the subject grows on me.

I wish intending candidates for the third-class certificate would turn to page 146 and take a hint or two. Before

lifting up the skep to place the irons in position, *always* ascertain the direction in which the combs run, as Mr. Herrod shows you. Then you can confidently anticipate that there will be no breakdown as you turn over the skep with the line of the combs, even although the works are comparatively fresh and new. Study the page I have named and the three following ones until you have mastered every detail, and you should easily pass in that section, which may turn out a very serious difficulty in these days when skeps are becoming such a rarity in many parts of our island.

To see the thing actually done, turn with me to page 208. The young lady from Swanley knows the master's eye is on her, and she coolly carries out the operations without either veil or gloves. The smoker is there as a reserve force, but the cool, deliberate, and easy pose is almost a direct guarantee that she deserves the author's praise of "doing it as well as any man could." One can conclude that she has selected the best light, that the driving irons are "siccar," that she beats gently but well, that her eyes are ever alert to spy the important lady walking up, and that her gentle and delicate touch will secure her majesty as a captive without injury. Where to stand is a very important point in successful bee-driving and finding and capturing the queen.

The most favourable position to stand in while carrying out other manipulations should be studied carefully, as in every case it tends not only to comfort but also to expedition and thoroughness in operation. In uncapping combs for extracting, the relative position of shallow-frame boxes, uncapping table, knife-heater, capping can, and extractor should be so arranged that they entail a minimum of motion on the operator. When making up racks of sections, have a place for empty racks, full racks, unfolded sections, cut foundation, reserve stores, as each point will tell in favour of a saving of time and labour. When cleaning up sections, have a place for everything, and everything in its right place, and so enable yourself to do the work expeditiously and well—with a maximum of comfort and a minimum of labour. In packing honey for the market, the same rule should be carefully observed. When wiring frames, have your stand or table at a comfortable height. Stand with all your paraphernalia within easy reach of your outstretched hand—sheets of foundation, your wire coil, the embedder with its heating apparatus, the brads, wire nails or staples for fastening, should each have a place for itself.

Arrange your hive-stands at such a height from the ground that there will not be much stooping, as this makes the labour lighter. Have a definite position for hive roof, quilts, and lifts when manipulating, so that there will be no searching for parts. The hand should go out mechanically to the exact spot, and always find the part there. The smoker should have a place of its own during manipulations. Everything should be placed systematically.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"ISLE OF WIGHT" DISEASE.

[8460] I can assure Mr. Mace (8442, page 183) that when writing on the above subject there was no "intentional omission of details." I merely stated my experience of the disease as briefly as possible.

With the exception of stocks Nos. 7, 14, and 23, all were hived either on full sheets or drawn-out combs.

When I established my apiary at Bures in the spring of 1910 I had my hives made with plinths on the body-boxes for doubling, so that I could give each stock twenty standard frames with a rack of shallow frames on top. I did this to reduce swarming to a minimum, as I had no one to look after the bees during my absence.

In the spring of 1911 I did not double my hives, as I wished to make them swarm for my cinematograph work. This left me with a number of standard frames with drawn-out combs, which I used for the swarms. During the summer I placed shallow frames with drawn-out combs (also obtained the previous year) over swarms and parent stocks, so that they had no opportunity of comb-building. Over the three hives with starters I had sections.

Mr. Mace quotes an instance where a runaway swarm located in a hollow tree did not survive the winter, but he did not say, and probably does not know, where they came from. I venture to suggest they came from one of his own hives, and being some of the "coddled" breed would meet with scant sympathy from Nature.

Last April I removed a colony of bees from one of the chimneys on Bletsoe Castle (Beds.). They had been there for sixty years, and had built combs 6ft. in length. They had no alighting board, no

porch to keep the rain out, no quilts to keep them warm, and, last but not least, no disease or waxmoth.

With regard to Mr. Wilson (8448, page 196), I will briefly enumerate replies, as space is limited in the JOURNAL, and I do not wish to trespass too much upon the Editor's kindness:—(1) There are two colonies of bees in trees within a few yards of my apiary quite free from "Isle of Wight" disease; (2) I have not heard of any disease in or around Bures; (3) No; (4) Until we can spread it by artificial means I do not admit it is either; (5) I have not heard of any; (6) But they were reared and fed by bees living under natural conditions.—J. C. BEE-MASON.

BEES IN PREHISTORIC TIMES.

[8461] Professor Rolleston, M.D., F.R.S., writing in 1877, speaks of Mead and Lime trees in Celtic times, and quotes from Logan's "Scottish Gael," ii., 147: "The Celtic Britons kept their bees in a bascaud formed of willow plaited." In 1827 one of these was found in Lanishaw Moss. In 1850 another was found in Chat Moss at a depth of 6ft. "This was a cone of about 2½yds. high and 1 yd. in diameter at the bottom, and was divided into four floors or separate hives."

In speaking of the potterns found in "mounds" or "burrows," a quantity of fine ware was found, and Mr. Wm. Hachett Jackson, of the University (Oxford) Museum, pointed out "that they were of the same contour, if not of the same paste, as the jars used in the Narbonne honey trade."

The history of the words used for "hive" appears to show that the first step towards the domestication of bees by the English was the formation of imitations in bark of the hollows of trees in which they were found. About the middle of the 10th century we read of Anglo-Saxon "beo-churls," the Anglo-Saxon word "beo-cist" (bee-chest), and the Latin "alvearia" (bee-hives), usually substituted for "rusca," from which it may be inferred that these rough constructions were superseded by regular hives.

He quotes from Professor Westwood's Life of St. Cadoc (Bibl. Cotton. Vesp. A. XIV.): "it is stated that he chose a solitary place for his monastery, having seen *aprum sub abore jacentem apes venientes et intrantes in Cavan Arborem.*"

He further states: "In the 'Second Life of St. David' there is a curious legend of a swarm of bees settling on a ship going to Ireland, the bees following St. David from place to place."—W. B. TALLENT.

SECURING A SWARM UNDER DIFFICULTIES.

[8462] The following may be of some interest, as being unusual:—

Just beyond the hedge at the end of my garden is a deep narrow ditch with steep banks; on the further side of the ditch is a wire fence, which is kept in position by the ordinary posts, and lean-to posts which are driven into my side of the bank. A swarm came off this morning, and settled, as I feared, on one of these lean-to posts, as it was soon thickly covered with bees. But I noticed also, about two feet off, another rather smaller cluster, half-way down the bank, *on the ground.* Thinking it more probable under the circumstances that the queen would be there, and not on the post, I very gently laid a skep on the ground, partly covering the cluster, and securing it from slipping by a pitchfork. Then I awaited results, and was pleased to notice that very soon the cluster on the post was breaking up. Gradually it hung down, and, swinging to and fro, at last effected a junction with the skep, about thirty inches off. Along this bee-bridge the whole swarm passed, until it was too thin to maintain the connection. A wisp of grass did the rest. As soon as the skep was covered with bees (it was a large swarm), I very gently wedged it up with two bricks to get it level, the pitchfork still keeping the skep from tumbling over. In two hours' time all the bees had established themselves in the skep, and then I gently moved it a few feet away, on to level ground. The rest was plain sailing.—HENRY F. GIPPS, Hundon Vicarage.

EXPERIENCES OF "ISLE OF WIGHT" DISEASE.

[8463] At the risk of traversing a well-worn track, I offer you my experiences of "Isle of Wight" disease.

I started bee-keeping in 1910, and lost both my stocks with the disease, in the autumn of that year. After making a bonfire of the interiors and thoroughly disinfecting the outer parts of the hives, I started again in 1911, with a stock in April, and a swarm in June. The stock is still going strong, but the swarm showed signs of the disease in August last, when I immediately sulphured it, and since then I have heard that the apiary (fourteen hives) from which I purchased it was wiped out in October. After sulphuring the bees I washed the hive, scorched the interior and sprayed the combs, which contained a great deal of honey and brood, with Izal. I ran a driven lot on to these combs in September, 1911, and shut them down for the winter. They came out strong this spring, and are

now working on twenty standard frames and two racks of sections.

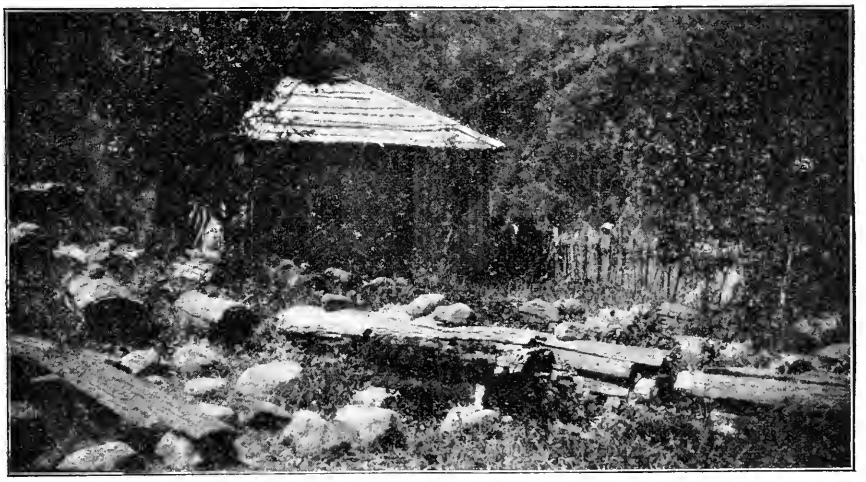
I fear I have proved nothing, but if the disease is as infectious as we are led to believe, would a slight spraying with Izal be sufficient disinfection? Again, if the bees contract the disease this year shall I be able to trace it to a slow incubation of the bacillus or to a fresh infection? My own feeling in the matter is that the bacillus dies with the bee, but may remain in a state of suspended animation so long as the bee is alive.

One fact I noticed: the bees seem abnormally thirsty when suffering from the disease.—E. G. TREMLETT.

BEE-KEEPING IN RUSSIA.

[8464] I read with much interest the article in the BRITISH BEE JOURNAL for May 16th (p. 191) on "Bee-keeping in Russia." I enclose a photograph taken by me about six years ago in the Government of Kutais in the Trans-Caucasus, which shows clearly the log hives described in your article. It will be noticed that the roofs are formed of strips of bark kept in place by large stones. If my recollection serves me right the bars on which the combs hung could be lifted out.

The bees were subdued by smoking, the apparatus used being simply a piece of burning touch-wood—the smoke being blown on to the combs with the mouth.—CHARLES M. PIGOTT.



LOG-HIVE APIARY IN RUSSIA.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Hobby (p. 186).—The explanation of the term "hob" is no doubt to be found in the presence of drones which often accompany after swarms!

Cross Purposes (p. 186).—Evidence that "hybrids"—a long-suffering term—are superior resisters of disease would be valuable just now with new diseases about. But is such evidence available? If it be, we may well modify our opinion of "hybrids." But in very few districts, I imagine, has the English bee been bred without infusion of blood, either from distant districts by way of swarms, driven bees, and special queens, or by importation of other races. After all, these so-called races are only varieties, and possibly such close inbreeding as would conduce to disease is hypothetical, whilst the benefit of "hybridisation," if existent, may be due to qualities of the introduced strain. On the other hand, reports appear to show that "I.O.W." disease has wiped out bees regardless of pedigree.

Hybridising Bees (p. 186).—How are the proportions of cross given by Mr. H. Scrope Viner calculated? If the Banats are supposed to be half Banat, half Black, the proportion would be quarter Banat, quarter Black, half Golden. If, however, the supposition be that the influence of nurse bees must be reckoned in the pedigree, then the proportion might be stated: quarter Banat, half Black, quarter Golden, unless the nurse bees were golden, or an error has occurred in statement. There is, however, little foundation for supposing that the nurse bees influence the strain, in spite of claims to the contrary. At least, I do not know of any serious attempt at proof.

Water in the Apiary (p. 194).—What a wonderful man that Scotsman is to produce such a long and readable article out of such simple materials. I am greatly

impressed by the number of purposes noted. A long period of plain living and high thinking, with a wet towel around my head by way of sympathetic stimulus, fails to suggest other supplementary purposes than those of the wax-melter and the ant-proof hive leg. I wonder what D. M. M. would do with other subjects treated similarly, and I venture to suggest to his fertile brain such headings as: Air, Fire and Sunlight, Wood, Weeds, and Honey.

Treatment of Experts (p. 204).—"Don't forget that the travelling expert may be in want of a meal and unable to get it." Thus Mr. Herrod in his "Helpful Hints." A sound and kind reminder. Many of the visited would willingly help the expert on his way did they but think of it, and it is to the credit of most bee-keepers that they are generally thoughtful of the traveller's comfort. Most experts have happy, and unhappy, memories of this kind, and some, likely enough, arrange their day's work accordingly. Small blame to them! It is pleasanter to have propolised fingers excused at the table of a humble bee-keeper than to have them viewed askance elsewhere. So, brother bee-keepers, don't forget Mr. Herrod's gentle reminder.

Danger of Infection (p. 205).—The statement that foul brood is more infectious than scarlet fever should not go unchallenged. Scarlet fever is no doubt attenuated nowadays, but that is not the point. There is no evidence that the diseases are communicated in the same way, and the risk of a travelling expert carrying infection is infinitesimal, where such a one cleanses his hands.

Old Bees and Disease (p. 205).—Is it not an error to suppose that an old bee cannot get pollen? I have found worn-out bees with frayed wings and full loads of pollen, unable to make another journey to the hive. Bees have been observed to gather pollen directly by means of the mandibles, and they are thus clearly not dependent upon the pollen-carrying hairs.

Tree Honey (p. 214).—One of Mr. Mace's criticisms might often be expressed with equal truth. I fear that "Cappings" are written hurriedly only too often. As I grow old I find time my most valuable commodity, and I should be sorry to think that Mr. Mace is dissatisfied with that portion of it which is given freely to the "B.B.J."! As to the palatableness of this early honey, that must be a matter for difference of opinion. If Mr. Mace and his friends like honey from fruit bloom, sycamore and hawthorn, I have no possible quarrel with them. In fact, I should be pleased to supply the demand, as we get a good deal in favourable seasons. But personally I do not care for it, and I think that most well-known judges of show honey would agree with my opinion that these honies are not first rate. I would not dispose of it indiscriminately, believing that only the best can create demand. I may have been, as Mr. Mace suggests, a little sweeping in my use of the term "tree honey," but my intention must be clear to any fair-minded or careful reader. Mr. Mace is no less sweeping when he mentions a large order like "Rosaceæ." As for handling the early flow better in sections than in shallow-combs, that again is evidently a matter of practical opinion. But my note was intended to indicate the usefulness of this early flow in obtaining worked-out comb. I endeavour to utilise it in this way, looking upon it as a stepping stone to the harvest proper.

Queries and Replies.

[8345] *Brood in Shallow-frame Super.*—I am a reader of your valuable journal and find many a novice, such as myself, asking and receiving much useful information through it. I supered a strong stock about three weeks since. Having seen it stated in the "Guide Book" that bees would take to supers better if the queen excluder was left off till the shallow combs were partly drawn out, I thought I would try a rack of shallow frames with foundation only. In about a week's time the frames were drawn out nicely, and a week later some were three-quarters filled with honey. Then I put the queen-excluder on, but judge of my surprise when I looked at the stock last Tuesday I found all the shallow frames but one packed with brood, a good deal of it being capped over. I must have left the queen in the super when I put the excluder on, as it is one that I had in use last season, and I had no trouble with the queen before. I might say the foundation was worker brood, but the bees have built and capped over on the lower part of some of the frames, drone-cells, which I am in doubt whether to cut away or not. Perhaps you could advise what would be best to do in the circumstances. One or two orchards are near to my hives and the bees have been very busy these few weeks of nice weather. The last three days have been wet; should I be doing right to feed with syrup slowly now, or would there be a danger of their storing it and bringing it up later into the supers.—J.B., Hepworth.

Reply.—You have evidently misread your Journal. Excluder should always be put under shallow frames. It is *sections* that may be put on for a time without the excluder. Your best plan now will be to make sure that the queen is in the brood-chamber, and put on the excluder, placing

a fresh super next the brood-chamber, putting the one now occupied by brood on the top of the new super. The brood will all hatch out and the combs be filled with honey. Don't cut out the drone cells, but when the drones have hatched out let them fly by removing the quilts for a few minutes.

[8346] *Hybrid Bees in Black Stock.*—I shall be obliged if you will explain, through the columns of the BEE JOURNAL, a phenomenon which has somewhat puzzled me. Last year, about July, one of the stocks that I look after lost its queen, and I gave it a frame of eggs and brood from another hive. It raised a queen all right, and this spring, when I examined it, was very strong, so that I could not find the queen, though there were plenty of eggs and brood, but I noticed a few, say half-a-dozen, bees with yellow bands, which I took to be Italian hybrids. There are both Italians and British Goldens in an apiary at Cavendish, about three miles away. That was about a month ago, and since then there does not appear to have been any increase in the proportion of yellow bees. Yesterday the stock swarmed, and while hiving the swarm I had a good view of the queen, and she was yellow-banded, showing more yellow than those workers who had bands. Now, if this is the queen that was raised last summer, how is it there are no signs of yellow bees in the stock from which the frame of young brood from which she was raised came? If she has been raised since, and is the daughter of that queen, how is it that the proportion of yellows to blacks is so small in the hive. She must be the sister of many of the bees in the apiary, and one would therefore expect a considerable number of yellow bees, but I saw none before this spring, and now they are rare. I enclose specimens of the two kinds of bees in the hive.—H. D., Sudbury.

REPLY.—The queen is, no doubt, an English black one, rather light in colour and is obviously the one raised last year. Italian bees are very social, the few in the hive have probably come from the apiary you mention, or perhaps from an Italian stock unknown to you, located nearer than you are aware of.

[8347] *Swarming Vagaries.*—One of my hives swarmed on the 19th ult. It was apparently a very good swarm, the queen being, I believe, an old one in her third or fourth year. It settled under and round the leg of the hive from which it had issued. I placed a skep touching the side of the hive near the leg, and a puff or two of smoke sent the bees readily and rather quickly into the skep. I wanted to return them to the same hive, and covered the entrance with queen-excluder zinc at 6.15 p.m. Many bees were flying about the entrance, and they seemed altogether very uneasy. When I came to throw the swarm out of the skep there was only 1lb. or 1½lb. of bees, which fairly raced into the hive, but I found no queen. The bees all went back to their own hive and everything seems perfectly quiet. Do you think, after leaving the hive the bees killed the old queen, and were anxious to return home? I shall be glad if you can solve my difficulty. I very frequently write to you, as I know no one who keeps bees or who can help me. I have to muddle along, but your kind answers to my frequent queries have been so clear and helpful that I believe I am making good progress.—H. T., Worsley.

REPLY.—Evidently the queen did not come out with the swarm, so they returned to the hive. This happens occasionally. We are pleased to have been of assistance to you.

[8348] *Supers on Slightly Diseased Stock.*—May I trouble you with some questions to which I should like answers in the JOURNAL, which is such a real help to us novices. (1) Should I move (in the case of healthy bees) unfilled and even undrawn sections to the centre of the rack, putting the filled ones at the outsides. (2) What must I do with two racks now on a slightly diseased hive? Should they be removed? (3) Are they to be treated with disinfectant (if left on); and should the sections individually be treated?—C. F. E. W., East Sheen.

REPLY.—(1) It is much better not to interfere with the section rack, but let the bees go on working. (2) Allow the racks to stay on until the sections are completed. (3) You must not treat the sections at all or they will taste of the cure. The racks only can be disinfected after removal of the sections.

[8349] *Removing Bees from Tree.*—(1) I have discovered a stock of bees in an ash tree, and would like to know which would be the best month to get them out? (2) Would it be possible to drive them into a skep? (3) Should they stay in the skep before being put into a frame-hive? I shall be glad of a reply in your most useful journal.—E. G. B., Cirencester.

REPLY.—(1) The sooner you can carry out the work the better. (2) This is generally impossible, as a rule it is necessary to cut out the combs and brush off the bees. (3) When removed, the combs containing brood should be tied into frames, and the bees and queen hived on to them; the box or hive should remain as near the old position as possible until the evening to collect all the bees, it can be removed when it is dark.

[8350] *Curing Foul Brood.*—I shall be glad if you will answer the following questions:—(1) If one has succeeded in arresting foul brood in the earlier stages and there remain a few of the cells here and there of the later stage in, I suppose, an incurable condition, (indented, or if not, coffee-coloured and ropy), what is best to be done? It seems a pity to destroy a flourishing lot for these few cells if the others are under hand. (2) Supposing by using formalin, &c., one has succeeded in arresting the earlier stages, what becomes of the eggs and brood the disinfectants have overcome? Will the bees get them out and clean the cells? (3) Can you suggest how to disinfect the clothes? I have changed everything before going to another apiary after handling a diseased stock, but then there is one's hair and veil and boots. (4) Next to white clover what gives the largest yield of honey? We have limes, chestnut, charlock, and trifolium near. Are honey-producing plants and trees graded as to yield?—FORESTER, Bristol.

REPLY.—(1) Use Apicure, which exactly meets the conditions you have named. (2) Yes. (3) Wear an overall, which can be washed; the veil can be dipped in formaldehyde, and the boots also sponged with this. (4) Charlock and then lime. We might print a list of these later on, but we are crowded out with copy just now.

[8351] *Preventing Swarming.*—(1) What is the best time to divide a stock of bees (to prevent swarming) according to the instructions given on page 93 of the "Guide Book," and, *if supered*, how should it be dealt with? (2) Is it better to introduce a new queen into the old hive, or, if left alone, will the bees raise one for themselves?—E. G. C., Stockport.

REPLY.—(1) When the hive is crowded with bees and the weather is warm. Any time this month; the operation should be carried out at midday, when the bees are flying. If the super is on it must be removed and put on the artificial swarm. (2) It is an advantage to introduce a fertile queen, but if left alone the bees will rear a queen for themselves.

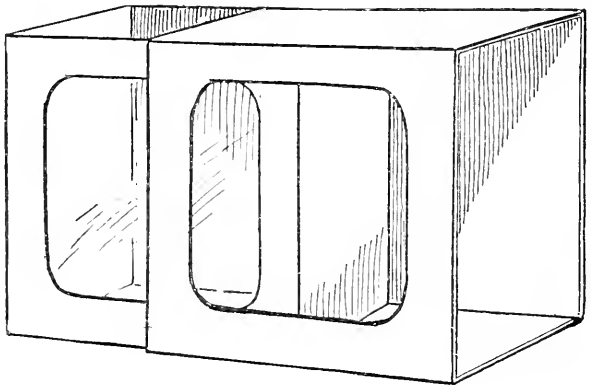
[8352] *Using Phenyle.—Bee Diseases Bill.*—Please reply to the following through "B.B.J.":—(1) Does the strength of phenyle leave it when added to hot or boiling syrup? (2) I am going to requeen my apiary next autumn; can you recommend a strain? (3) Why is beet sugar injurious to bees? (4) Is Apicure sufficient to cure all cases of foul brood? (5) What will be the penalty under the Bill for exposing diseased honey to bees? (6) Can the Inspector order a man to have diseased bees removed from his roof? (7) At whose expense?—W. W. R., Dunster.

REPLY.—(1) The phenyle should be added to the syrup when the latter is just warm. (2) British bees. (3) We have answered this so many times we cannot repeat it again. Please refer to "B.B.J." April 3rd, page 305. (4) Yes. (5), (6) and (7) You must wait for the Bill and see.

NOVELTIES FOR 1912.

THE "BOWEN" SECTION-CASE.

Mr. A. H. Bowen has sent us a specimen of his new section-case (registered), which he claims should be used by all bee-keepers for the following reasons:—"Because it is indispensable to all up-to-date bee-keepers. It saves money, time, and labour.. It is the cheapest, simplest, and yet most novel on the market. It is the smallest and lightest case manufactured. No glass, therefore no breakage. It is collapsible and easily packed. Salesmen can handle it without injury to the comb. The appearance of the section is greatly improved. Honey well displayed means honey sold. No damage by wasps, flies, or dust. It is instantly squared up and fitted on the section. The outer case is reversible and affords adequate protection when travelling." The case is easily adjusted, as will be seen from the illustration, the inner case, which has gelatine windows, being placed first over the section, while the outer one, fitted on from right to left, completely encases it.



We understand that Mr. Burton N. Gates has requested samples of these cases to be placed in the permanent exhibition of bee appliances which he is forming for the U.S.A. Government.

Bee Shows to Come.

June 11 to 14, at Guildford.—Royal Counties Agricultural Society's Show.—Bee Appliance and Honey Department, under the management of the Surrey Bee-Keepers' Association. **Entries closed.**

June 12 and 13, at Romford, Essex. In connection with the Essex Agricultural Society, the Essex Bee-Keepers' Association will hold their Annual Show of Honey, Wax, Bees, and Appliances. **Entries closed.**

June 27th, 28th, and 29th, at Barnet.—In connection with the Old English Fair and Flower Show, the Barnet and District Bee-keepers' Association will hold a show of section and extracted honey. Classes open to all. Schedules and entry forms from G. James Flashman, Hon. Sec., 37 Falkland-road, Barnet. **Entries close June 24th.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. **Entries closed.**

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13th July.**

July 18th, at St. Albans.—St. Albans and District Bee-keepers' Association hold their Annual Show, in connection with the St. Albans Horticultural Society, in Clarence Park. Open classes, liberal prizes. Schedules and all particulars from E. Watson, Holywell Hill, St. Albans. **Entries close July 12th.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. Schedule, &c., from James H. Hadfield, Hon. Sec., Lincs. Bee-Keepers' Association, Alford, Lincs. **Entries close 14th June.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

Cambridge Mammoth Show, 1912.—Sections for Horticulture, Bees and Honey. Schedules of prizes for the above Sections are now ready, and can be obtained of the Sectional Secretary, as under. Schedules will be sent to all 1911 Exhibitors, who need not apply. Free spaces offered in Horticultural Section to Growers for Trade Runs. E. F. Dant, Sectional Hon. Sec., 17, Sussex-street, Cambridge.

BIRD'S NEST IN A BEEHIVE.

On a farm at Nyon, near Geneva, a pair of linnets built a nest in a beehive in the spring, and have continued to live on the best of terms with the bees. There are now several eggs in the nest, and the birds and insects fly in and out, using the common entrance.—*Evening Standard.*

Notices to Correspondents.

J. R. G. (Drumlithie).—*British Wild Bees.*—The bees are *Andrena rosæ*, a common species, that nests in the ground. A meek and peaceful disposition is characteristic of the genus, and to attempt to plunder a bee-hive or even to gain admittance is the last thing one would expect any of the species to do. (F. W. L. Sladen).

J. M. K. (Strathcarron).—*Race of Bees.*—The bees were too dry for us to say very much about them, but we fear "Isle of Wight" disease is present. There is nothing but chilled brood in the comb. (2) Ordinary English. (3) Back numbers of "B.B.J." can be had.

H. W. (Smethwick).—*Virgin Queens and Casts.*—The bees are virgin queens. It was a cast which issued, not a swarm, and it is not unusual for several virgins to accompany these. Death has been caused by their fighting each other.

H. B. (Sussex).—*Isle of Wight Disease.*—There is no doubt that the disease originates with the workers and not with the drones.

C. W. (Kent).—*Curing Foul Brood.*—If you continue using Apicure the disease will be cured without further trouble. The spores are not killed, but as they break into life, *i.e.*, the bacilli are liberated, these are killed by the fumes from the Apicure.

N. B. G. (Monmouth).—*Casts.*—Yes, no doubt the second cast, which you call a third swarm, came from the same hive. You did right in returning them.

Tact (Chislehurst).—*Dwindling Stock.*—(1) The grubs are those of the wax moth, but this does not imply that the bees are diseased. In order to ascertain if disease is present, send us a piece of comb containing brood. (2) The honey will be fit for household use, and the combs should be melted down for wax.

A. P. (Acton).—*Driving Bees.*—Yes, you can drive them in the same way as from a skep. In order to see if they are diseased, break out a piece of comb containing brood and examine it.

Suspected Disease.

W. H. H. (Norfolk).—The comb is affected with foul brood.

Cymro (Kent).—The comb contains odourless foul brood. If the colony is a strong one, use Apicure, which will cure it. Apicure should also be used in the other hives as a preventive.

T. W. B. (Hampstead).—We cannot find anything wrong with the bees, except that several are overloaded with nectar.

C. L. C. (Woodford), F. B. L. (Hythe), and X. E. C. R. (Henley).—The bees have died from "Isle of Wight" disease.

R. K. (Lesmahagow).—It is foul brood in the first stage. Use "Apicure," and the disease will be overcome.

Miss Rae (Glasgow) and A. H. (Gravesend).—We are afraid it is "Isle of Wight" disease.

J. E. (Adpar).—Both pieces of comb show that the bees are short of food. No. 1 is healthy, but No. 2 shows signs of foul brood. Unhealthy conditions and unsuitable food lower the vitality of the bees, and render them liable to disease.

J. P. (Devon).—It is "Isle of Wight" disease. You must not use the combs but burn them.

W. T. J. (Hants).—It was very thoughtless of you to send bees with so much honey. This leaked out of the package and made a dreadful mess of all the other parcels arriving by that mail. What the post-bag in which it travelled would be like we can well imagine. It was utterly impossible to carry out an examination.

Honey Samples.

N. A. H. (Canterbury).—The sample of honey is a very good one of medium colour. It has been gathered mainly from hawthorn.

J. M. (Much Wenlock).—The honey is a fairly good sample, mainly from hawthorn.

A. J. S. (Upper Norwood).—The honey is good in colour and flavour, of fair density, and has been gathered from sycamore.

F. A. B. (Snaith).—Sample has been gathered from hawthorn and sycamore.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

NEW SECTIONS.—Few dozens good, fruit and hawthorn, 9s. 6d. per dozen, on rail.—A. SIMPSON, Chalfont St. Giles, Bucks. v 98

SEVERAL NEW W.B.C. HIVES, painted, 12s. 6d. each; exchange for swarms, or strong skeps of Bees; laying Queens, 3s. each; 4-frame Nuclei, 12/-.—WILLETT, JUN., Bee-keeper, New Malden, Surrey. v 97

WANTED, 2lb. Bees, without Queen, or small cast and Virgin.—D. W., "B.B.J." Office, 23, Bedford-street, W.C. v 104

FOR SALE, twenty painted Beehives, cheap to clear.—WOODS, Boxford, Colchester. v 112

FOR HIRE, a "Herrod" demonstrating tent, 10s 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand, W.C.

FOR SALE, or exchange for Bees, &c., six good black Airedale and Spaniel Puppies, will make good workers or guards, &c., price 12s. 6d. each.—Apply, W. A. ALLFREE, Talbot Inn, Mansfield. v 99

CAN SPARE STRONG HEALTHY 10-FRAME STOCKS young Queens, 25s.; Nuclei, 1912 Queens, 3-frame, 12s. 6d.; 4-frame, 14s. 6d.; carriage forward, boxes 2s. 6d., returnable.—CORNALL, The Schools, Minster-in-Thanet. v 105

ONE W.B.C. Hive, one Thompson Hive, skep (new), smoker, feeder, cork cushion, two racks, sections (new), two Queen excluders, 22s. the lot.—MATTHEWS, Rosedale, St. Agnes-road, Moseley. v 101

THREE clean double walled Standard Hives, Cowan pattern, 5s. each; few swarm catchers, 3s. 6d., fit any hive with porch removed.—WILLSON, Beehives, Newhaw, Addlestone. v 102

WANTED, geared Extractor and Wax Extractor.—MISS GORDON, Wethersfield-place, Braintree, Essex. v 107

WANTED, Honey Extractor, cheap; also healthy drawn-out Standard Combs.—STILEMAN, Grasscroft, Elmhyrst-road, Weston-super-Mare. v 108

SURPLUS 1912 pure English Black Queens, 4s. each, immediate delivery; Sladen Carniolian Hybrids, 5s.—WHEATLEY, Spa Apiary, Hinckley. v 109

THREE strong healthy Stocks, in strong hives, one Observatory Hive, with Swarm, and all accessories, for sale.—DOELL, Laburnum Grove, Beeston, Notts. v 111

TAYLOR'S No. 3 HIVE, 10-frames, dummy, telescopic 9in. lift, never used, painted, rack sections, full sheets, price 8s. 6d.; three new varnished shallow frame Exhibition Cases, 5s.; good sound Extractor, cost 23s., cheap at 10s. 6d.; rack W.B.S. section frames, new, 3s.; number second-hand Hives, clean and healthy; five W.B.C., one pattern, thoroughly sound, with two supers each, 7s. each; also cheap odd Hives, all sound.—GORNALL, Thornycroft, Oxted. v 113

PLATFORM SCALES, 35s.; 1cwt. bag Sussex Ground Oats, 11s.; exchange for healthy Bees.—156 Moston-lane, Manchester. v 114

W.B.C. HIVE, with stock of healthy Bees, already supered, 30s.—C. H. SEYMOUR, Mayfield, East Preston, Angmering. v 115

SECTIONS, glazed, 10s. dozen; Extracted Honey, 1lb. screw-top bottles, 9s. 6d., carriage paid within 50 miles.—SARGEANT, Southview, Rayne, Essex. v 116

OBSERVATORY HIVE for sale, handsome, solid mahogany, brass turntable, complete, perfect, clean; particulars.—ROBERTSON, St. Mary's Crescent, Portsmouth. v 117

PURE English Light Honey for sale, in 28lb. tins, 14s.—JENNINGS, Howell, Heckington, Lincs. v 118

TWO STRONG STOCKS HYBRIDS, 10 frames, ready for supering, expert's guarantee of health, combs new, boxes returnable, 30s.—CEILEY, Highcroft, Muswell Hill-road, N. v 200

GENUINE high flying Tipplers, ten pairs youngsters; exchange Bees or Appliances; particulars.—DAWSON, Handbridge Newsagency, Chester. v 201

BEES, 5 stocks in Hives, on ten and twelve frames, splendid condition for honey season, £2 to £2 10s., guaranteed healthy; four empty Hives, new and secondhand, 12s. 6d. and 8s.—NESBIT, 32 Stracey-rd, Harlesden, Middlesex. v 203

WANTED, Natural Swarm Natives, 2s. 6d. lb., not less than 5lb.—F. BIGGE, Tyburn, Birmingham. v 202

Editorial, Notices, &c.

NORTH-WEST DURHAM B.K.A.

The annual meeting of the North-West Durham Bee-Keepers' Association, held at Consett, was presided over by Mr. R. Colpitts. The financial statement showed that the income was £10 5s., and there was a credit balance of £3 9s. 6d. The secretary reported that the heather harvest last season opened in glorious sunshine, and the bees did splendidly for the first 14 days; but, unfortunately, after a spell of heat, dull weather prevailed, with the result that very little honey was stored in the supers. Afterwards the "Isle of Wight" disease was noticed on the moors of Edmondbyers, and it spread all over the district, several members losing valuable stocks of bees in consequence. Officers for next year were elected as follows:—President, Mr. S. F. Annandale; vice-president, Mr. J. N. Kidd (Stocksfield); secretary and treasurer, Mr. J. Walton.—*Communicated.*

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of May, 1912, was £7,494.—From a report furnished to the BRITISH BEE JOURNAL by the Statistical Officer, H.M. Customs.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(*Continued from page* 213.)

No. 18. THE PLUM (*Prunus domesticus*) AND CHERRY (*Prunus, Cerasus*).

NAT. ORDER, *Rosaceæ.*

As these two sources of nectar are sister species, and their pollens practically alike, we will treat of them together.

The plum is a native of Asia, and of many parts of Europe, and even grows wild in the hedges of various districts of our own country.

I well remember when a lad how we used to look up the hedge-rows for the "Bullaces," this being the name given to the larger species of wild Plum—and then watch impatiently for their ripening, which, I am afraid, was never allowed to take place fully, as we were too eager for them; and most people will be familiar with the Sloe, sometimes called "Blackthorn," a second and smaller species of wild Plum, much used for making wine. Of the cultivated Plums we have a large variety. Many sorts appear to have been introduced into England as early as the fifteenth century. The old, and yet ever welcome, Greengage—the *Reine Claude*, of France—is called Gage in England, after the name of the family who first cultivated it here, much in the same way as other fruit is named, *e.g.*, Bramley's Seedling Apple, which was raised by a Mr. Bramley at Southwell, in the county of Notts.

In some countries a considerable quantity of alcohol is produced from plums by fermentation. Dried plums form a large article of commerce under the name of Prunes and French Plums.

The Plum flowers before the leaves appear, and the blossoms are in such profusion that each tree is literally covered as with a mantle of snow, and on sunny days bee-keepers know how the bees revel in them; for they produce both nectar and pollen freely when weather conditions are favourable.

The Cherry, like its sister, is found wild, and this may be a degenerated species of that introduced by the Romans, as it is not considered to be truly indigenous to this country. It flowers early in May, and is too conspicuous to be overlooked. It is a great favourite of mine, and when watching the trees in spring, I eagerly look for its opening flowers, so that I may get a spray or two to take home. The blossoms are borne on stalks about an inch and a half or two inches long in groups of some three or four; these spring from leafless buds, surrounded by brown scales, of which the inner ones become green and leaf-like at the tips. The petals and sepals are five in number; the calyx is thrown bodily back on to the stem as it is in the bulbous crowfoot. The stamens form a conspicuous yellow mass in the centre of the flowers, and the fruit is edible only to birds *and boys*, as it has a bitter taste that makes it inferior to the cultivated kinds.

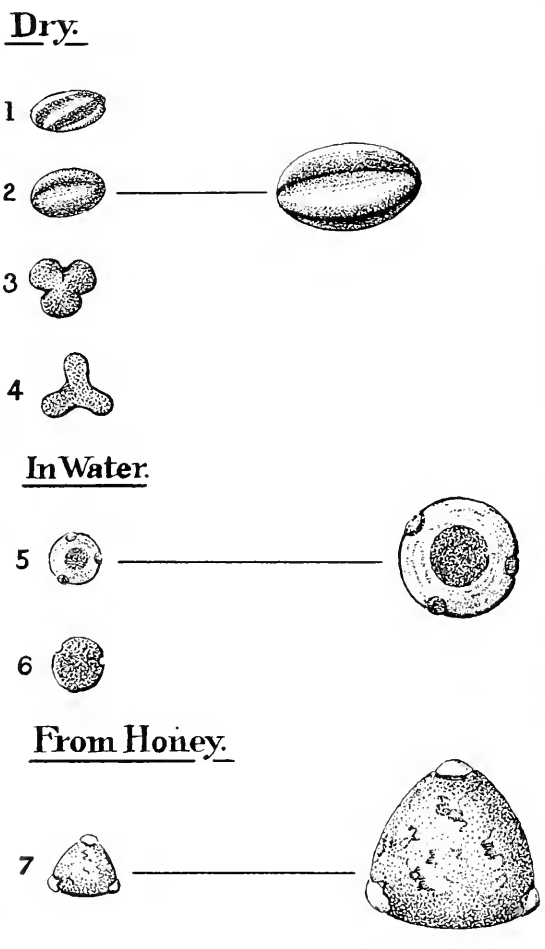
Of the present cultivated sorts it is generally said that the first were introduced about the time of Henry VIII., and planted at Sittingbourne in Kent, the cherry orchards of that county being still famous. It seems, however, from other sources, that they were probably known much earlier than this, or, at any rate, that cherries were hawked about London before the middle of the sixteenth century just in the same manner that they are at the present time. The commencement of the season was announced by one carrying a bough loaded with fruit and crying "cherry ripe." Our present popular, though somewhat old, song, "Cherry ripe, ripe I cry," was derived from this custom.

As stated, the pollens of both Plum and Cherry are identical in form in different media except in the size of the grain. That from Plum, when dry, measures $\frac{2\frac{1}{2}}{1000}$ in. by $\frac{1\frac{1}{2}}{1000}$ in., and from Cherry, when dry, measures $\frac{1\frac{1}{2}}{1000}$ in. by $\frac{1}{1000}$ in. From the drawings it will be seen that in

outline form it is ovoid with three deeply cut flutings, which reach from end to end, and when viewed endways almost separate it into three wings. This deep fluting causes the grain to appear of many different forms which depend upon the angle from which it is viewed, as seen at Nos. 1, 2, and 3, No. 4 being a section through the middle. The colour of the grains by reflected light is a very pale green, and by transmitted light, a greenish-yellow.

When placed in water they immediately assume a spherical form with a large nucleus in the centre; three points become visible at which the processes grow at a later period, but are then crescent-shaped cavities, as shown at No. 5. Still later the nucleus vanishes and the grain appears filled with a granular mass, as at No. 6. These measure in the Plum $\frac{2}{1000}$ in. diameter, and in the Cherry, $\frac{1}{1000}$ in. When taken from honey they will be seen to have mostly assumed the triangular form, the processes not being too prominent and wrinkled in appearance, some of the wrinkles being very marked, as seen in No. 7. This is the final form, and in this condition the grain measures in the Plum $\frac{2}{1000}$ in. and in the Cherry $\frac{1\frac{1}{2}}{1000}$ in. from point to point of the angle. The same form is well preserved in the empty pellicles.

(To be continued.)



POLLEN OF PLUM AND CHERRY.

RECOLLECTIONS OF AN OLD HAND.

By James A. Abbott.

(Continued from p. 308, vol. 39.)

Serious illness has delayed the continuation of this article, as when ill one thinks of his ailments more than of his other obligations and I am only now able to use my mind for recalling these old memoirs. One of my happiest experiences was the conversation I had with the present King, his brother, the late Duke of Clarence, and Queen Alexandra, then Princess of Wales. The incident occurred at the Royal Agricultural Society's Show at Kilburn (chiefly memorable as a slough of mud) and the show had been opened by the Prince of Wales, who afterwards with his suite made a tour through the exhibition. He was received at the bee tent by Mr. Cowan, the tent being almost cleared of people; but my father and myself were, I suppose, considered privileged, for we were not asked to leave. I had in my possession a small glass-topped box containing a queen and a few attendant bees. The royal party had passed on, but the two boys were behind the rest, and I thought it would amuse them to see the loyalty of the worker bees, every one of which had its head towards the queen. This so pleased them that they called: "Oh, mother, come and see this." So "Mother," accompanied by the Duke of Cambridge and others I did not know, came back and we had quite a long talk about the bees, chiefly as to their fondness for their "Queen"; this seemed to please the royal party, and it was only when the Prince of Wales had finished his tour of the tent, where he was shown the exhibits by Mr. Cowan, assisted by the late Mr. Cheshire, that they went to join him; so I had a long and quite unexpected interview with Royalty. This was mentioned in the Bee Journal at the time, but

after so many years it might be interesting to some readers.

A point that has struck me as being rather peculiar was the great immunity I have always had (since I became inoculated) not only from bee stings, but from the attention of other insects. At first a bee sting caused considerable swelling, and I well remember having to "lie up" for a week through a sting on the bridge of the nose which completely closed my eyes. As I got more used to it, the effect of the stings became less, so that I thought nothing of forcing the bees to sting me to amuse the public, but the point I now mention is the singular immunity I always enjoyed from other insect bites, &c. Wasps' stings still cause some pain, but I never got a sting from a hornet. Nettle stings, however, always caused great irritation, though the scientists of earlier days contended that the poison was similar to that of the bee, ant, &c., *viz.*, formic acid. I was quite sure that this was not the case, and I think it is now proved that formic acid is only a vehicle for the conveyance of the actual poison, though probably helping it in its first painful shock, and that the real poison causing the swelling, &c., is an alkaloid analogous to snake bite. I have, therefore, no doubt that by taking small doses to commence with, a man could soon become immune to snake bites, and could then do the snake-charmer business without drawing the cobra's fangs as now practised.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8465] The month of June came in in bright sunshine, and on the 1st the bees had a grand field day. The few showers of rain, which were wanted badly in our district, were welcome, as those of the previous week were soon dried up. The temperature is now low for the time of year, even when we get bright sunshine during the day the mornings and evenings are cold, and the honey-flow is still in abeyance. Mowing machines, alas! are laying our sainfoin bloom low; the last week in May is abnormally early for grass-mowing.

I was interested in Mr. Mason's contention in "B.B.J." of May 2nd (page 174) that bees would be more healthy—shall I say more immune to disease and more robust—if allowed to build more comb. Possibly there is something in the idea, although at present my bees are as healthy as they were twenty or thirty years ago, and I have not called on them to produce much wax, although each year I send a fair parcel to be made up into foundation. I use full sheets in sections, and also in giving extra brood-combs one is almost bound to use full sheets of foundation, or have a comb of drone brood in the centre of the brood-nest in May and June. When one comes, however, to take into consideration that a new swarm gets nine full sheets in the ten frames if allowed two halves or parts of sheets at the back and front for drone comb, and then the several racks of sections, we find that the modern swarm will be called upon to produce nearly as much wax as it would if hived in a skep as of yore.

My friend Mr. Heap (page 117) deplores that I am still an objector to legislation, but when someone can point to a country where Foul Brood Acts are in force and say these Acts have *cured* the bees of disease in those countries, then will be the time when the bee-keepers in England will fall into line and support legislation. Till then, the biggest bee-keepers will oppose legislation. I hope every objector will write without delay to his M.P. and also to Mr. Runciman, pointing out the futility of Foul Brood Acts in other lands. I hear from every side that experts are powerless to help when a case of "Isle of Wight" is diagnosed.

Additional supers should be placed under the first one during June, later on extra room may be given on top of the partly-filled ones—by this method there will not be so many partly-filled sections at the clearing of the hives at the end of the harvest. The best guide in judging how and when to super and give extra room is to study the district in which you live; you will soon know its capabilities of honey-production and work accordingly. When working among the bees keep an alert eye for wax moths; they are generally in pairs; if you see one, depend upon it its mate is near at hand.—W. Woodley, Beedon, Newbury.

POSITION WHEN MANIPULATING.

[8466] The article in your issue of 6th inst. on "Where to Stand when Manipulating," by D. M. Macdonald, to me was most interesting, because, to my mind, he is one of the very few writers who have thoroughly grasped what a beginner really requires to know when he is about to handle a hive of bees, and I would recommend all such to read the

article carefully. But one point which he has omitted, and to my mind one most important, is this: While working with a hive, especially an established stock, be sure the wind blows past the hive first, whether it is front, back, or sides. If this rule is observed there will be very little worry with bees coming out at the entrance, and necessarily very little risk of being stung.

My reason for drawing attention to this is because I feel convinced the writer of your article inadvertently omitted to mention this fact.—A. H. MOWBRAY.

BEE DISEASES LEGISLATION.

[8467] May I offer one suggestion relative to the proposed Bee Legislation? It cannot be denied that the success or otherwise of this scheme will depend principally on the capabilities of the Inspector, who is to visit apiaries, examine, and then enforce his judgment. I notice that a number of the supporters of this legislation merely express a "hope" or a "belief" that inspectors will turn out to be all that is desirable, but it would surely be better to trust to some safeguard in the Bill itself, than be satisfied with such true *laissez-faire*. A clause might be inserted holding the Inspector responsible for wrong advice, carelessness, or want of knowledge, should it entail loss on the owner of the apiary. Such provision seems to me only fair, as it would impress on the Inspector a feeling of responsibility. This principle is acted on with regard to the medical profession, and why should it not be here?—C. B. HUNTER, (Lieut.-Colonel late I.M.S.)

BEES IMPRISONED IN SECTION.

[8468] While helping a neighbour to remove a section-rack we found in three of the sections a bee imprisoned in the wax at the edge of the section. They were each fixed parallel to the side, and had evidently been "built in" by other bees in that position, as there were ribs of additional cells right across both sides of the imprisoned bees' body. I tried to cut one out to send up to you, but the wax round the bees broke and liberated them before I could cut it through. The bees crawled away when released; they seemed unable to fly, and would take no notice of honey placed right in front of them. I have not seen this before, and wondered if anyone else could record a similar instance, or suggest any sort of explanation? —A. B. H.

EXPERTS AND DISEASE.

[8469] I should like to thank Mr. Crawshaw for his comment on my letter, which appears on page 226 of the "B.B.J." for June 6th.

The meaning of my comparison between scarlet fever and foul brood was not quite clearly expressed. Even though the risk of carrying foul brood germs be not so great as is the case with those of scarlet fever, yet, on account of the almost indestructible character of foul brood spores, more severe measures of disinfection are necessary than is the case with the other disease. I do not think good authorities will be found to agree with Mr. Crawshaw that washing the hands is sufficient precaution. On page 149 of the "Guide Book" (fifteenth edition) it is stated that *clothes*, *hands*, and *appliances must* be washed with carbolic soap, and *other articles sprayed* with a carbolic solution. (The italics are mine). I would also call attention to the reply given to Forester, Bristol, page 228, "B.B.J.," June 6th, the very number in which Mr. Crawshaw's remarks appear.—A SMALL BEE-KEEPER.

STIFF PAPER AS FOUNDATION.

[8470] A few days ago, whilst cycling through a North Devon village, I noticed some frame hives in a cottage garden, and seeing a man working near, evidently the proprietor of the hives in question, I stopped and chatted *re* bees. He informed me that his bees would not work in sections regularly, and that he never had any nicely-filled ones such as he knew other people got from their bees. I offered to inspect for him, and I was promptly told to take care, or I should get "stinged." Anyway I chanced that, and found that he had fitted the sections with sheets of stiff white paper, thinking that bees would work on that. I put him right, but thought that the above was unique enough for the "B.B.J.," of which I am a constant reader.

We have had a very few swarms down here as yet; in fact, I have only heard of five this season, but some people I know in Hampshire have had six swarms from five hives.—A. C. B., Ilfracombe.

A HEAVY SKEP.

[8471] In reply to Mr. L. S. Crawshaw in his "Cappings of Comb," on page 169, I should like to say if he will again read what I said on page 107 he will find that there was no reason for suggesting that the skep was made of some heavy material, "such as cast iron," nor yet was "the crock and stand" included. My statement was that I have had bees in skeps of various shapes and sizes, and this was a large one made in order to experiment in getting large swarms, which use at that time (25 years ago) it amply fulfilled. The dimensions were 22in. across, 18in. high inside measure; the skep was made of straw, the usual hive thickness.—C. BELL.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

Mr. W. Freeman's apiary is a typical example of the modern up-to-date bee-garden: no weeds or grass are allowed to impede the busy workers when entering their homes, no tumble-down or make-shift hives are seen, all are of the latest pattern, several with the "Claustral" ventilating chamber. We should judge that the owner of such an apiary is one quick to see the advantage of adopting improved methods, adapting them to his own requirements. We need only draw attention to the fact that all the hives are home-made, and leave Mr. Freeman's excellent account of his bee-keeping methods to speak for itself. He says:—

MR. W. FREEMAN'S APIARY, GOSFORD GREEN, NEAR COVENTRY.

"My interest in bees dates back to my boyhood, when I visited an agricultural show in the neighbourhood, and there saw demonstrations in the bee-tent. From that time I always wished to keep bees, but my wish was not realised for many years.

I commenced with one stock, in a modern hive, and being a carpenter by trade I made most of the others myself, and have had about a dozen colonies for the past fifteen or sixteen years. When starting, I procured Mr. Cowan's 'Guide Book,' and always advise beginners to do likewise. I have also taken the "B.B.J." during my whole bee-keeping career, and look forward with pleasurable anticipation to its delivery, as I consider it is the best value for a penny I ever receive. I have gained my knowledge from these books and practical experience.

I work for extracted honey, as my apiary is situated near Gosford Green (the scene of the trial by arms of the Dukes of Hereford and Norfolk in 1397, which was stopped by Richard II.). The land around this district has been developed very much lately for building purposes. My crop is from varying sources, such as fruit trees, clover and lime blossoms. I cannot boast of large averages, as the district now is unsuitable, although last season my best stock gave me 64lb. of surplus. I never take any honey from brood-boxes. I have also tried queen-rearing, for my own use, and have been fairly successful. I generally manage to sell all the honey I have to spare, at 1s. per lb., but a large amount is consumed in my household.

The longer I keep bees the more convinced I feel that it pays best to have only young and vigorous queens. With regard to the illustration of my apiary, on the right is a bee-shed containing four colonies, which can be manipulated from the back. These colonies come out strongest in spring. The person on the right is a Mr. Dubock, one of my bee-keeping recruits; the figure on the left is myself.

Doubtless many bee-keepers like myself were much interested in Mr. L. Snelgrove's paper on 'Queen Rearing,' which he read at the B.B.K.A. conversazione last October, and would be grateful to him if he would give us in the 'B.B.J.' some of the important details of management. I trust the present season will be favourable to bee-keepers generally."

Queries and Replies.

[8353] *Extracting Honey.—Hive for the Moors.*—I should be much obliged if you would give me the following information through the "B.B.J." :—(1) Is it necessary to have the wire cages in an extractor, to prevent the combs being thrown from their fastenings, even if wired? (2) If supers are left on the hive some little time after they are filled, will the honey be fit to bottle as soon as extracted. (3) I have been told that a W.B.C. hive is not a good one for moving to the moors; is there any reason for this statement, except that the hives are rather bulky? (4) How is it that bees are able to get the cells full of honey before they cap them without it flowing out, especially if not very dense? Thanking you for past information.—J. S. R.

REPLY.—(1) Yes, or the combs will break down. (2) If the honey is sealed over it shows that it is ripe, and it can be jarred off as soon as extracted. (3) We see no difficulty in moving W.B.C. hives to the moors, though they are certainly a little more bulky than single-walled hives, which are the kind generally used for the moors. (4) If you examine a piece of comb you will see the cells are built with an upward inclination; this prevents the honey running out.

[8354] *Swarm Leaving Box when Hived.*—I hived a swarm from one of my stocks and the bees all left the box, but did not cluster again. May I infer that they returned to the old hive? If so, how could I have found out? (2) Will the swarm come out again? (3) If I had accidentally dropped the queen would the bees have found her?—P. V. L., Worcester.

REPLY.—(1) There is little doubt but that the bees returned to the parent hive. You can ascertain this by an examination of the hive from which they issued, which will be crowded with bees if the swarm returned; if not in this condition it may have decamped. (2) It is possible that it may issue again. (3) The queen would fly if you dropped her, but even if she were unable to rise the bees would find her.

[8355] *Introducing Queens.—Fertile Workers.*—Would you kindly help me out of a difficulty by answering the following questions:—On Tuesday, the 4th inst., I took four frames containing brood and honey, and crowded with bees, out of one of my hives and placed them in a temporary hive, holding only four frames. During that night and the following day the bees evidently fought, as I gathered up quite a pint of dead ones in front of the hive. On Wednesday evening the secretary of the local B.K.A. kindly introduced a Carniolan queen in a pipe-cover cage; but three days later when I went to release her, I found her dead. (1) Do you think she was stung through the gauze? as she was all right when she was caged. (2) I at once sent off for another; but it will probably be a week before I receive it. Will that be too late to introduce *to the same* four frames of bees? (3) How long should the queen be kept after arrival before introducing, or may she be introduced at once? (4) How is a fertile worker raised? Is its cell similar to a queen cell? I have never had any trouble with such, so I ask this question, that I may distinguish the cell if possible. (5) There was a good deal of sealed brood, also some larvæ and eggs on Wednesday. Is it too late for bees to raise a queen from them? (6) If a fertile worker were present, and I introduce the new queen as soon as she arrives, which would the bees probably kill? (7) Since writing the above I have again examined the frames and find a queen-cell covered by the bees; should I place a cage over it, containing some bees, so as to save hunting for the queen later on? I might state I hope to use this fresh strain for experiment and to study that race of bee, and *not* to change my present stocks. Apologising for asking so many questions.—"BELLE VUE," Ipswich.

REPLY.—(1) We do not think that possible. The queen may have died from want of food, especially if she was caged without attendants. (2) It is a long time, but if you cage her on a comb containing unsealed brood from the same hive and keep her caged for forty-eight hours, she will be accepted. (3) Introduce at once. (4) A laying worker is reared in an ordinary worker-cell. (5) No, and you must destroy the queen-cells before you introduce the new queen; or, better still, do it now. (6) The fertile queen, but you need not fear this, as laying workers are only found when a colony has been queenless a long time. (7) See answer to 5.

[8356] *Utilising Inferior Honey.*—Kindly let me know the following, viz.: What use can be made of honey which I have just extracted; it is gathered principally from thorn and fruit bloom, consequently it is not of good flavour. I have extracted it so that it would not get mixed with the clover honey?—NIOBE, Ormskirk.

REPLY.—The honey can be used for feeding back to the bees in autumn, or for making confectionery, vinegar, or mead.

[8357] *Re-queening.*—I have six good strong hives of native bees, but some of my queens are old. There is no disease among them, and I greatly fear I may introduce this if I try a change of blood, yet I think I should have a change this season. (1) Do you think I would be safe in buying

Italian queens from E. Penna? (2) I am soon expecting several swarms; these old queens I could replace with Italians if you advised this? (3) Would the cross Italians and British be of irritable temper and difficult to work with? We are likely to have a bad clover harvest owing to the drought.—E. H., Stirling.

REPLY.—(1) So far as we know it would be quite safe. (2) We prefer British bees, but it is a matter of choice. (3) Yes, very probably. We should advise you to rear your own queens from one of your best stocks.

[8358] *Using Apicure* — Will you please answer in the "B.B.J." these questions:— (1) In using Herrod's "Apicure," how long will each application last before it all evaporates, that is to say, how often must the remedy be renewed? (2) Will it eventually *cure* bad cases? (3) Will it destroy the germs in the sealed-up cells?—G. B., Banbury.

REPLY.—(1) Much depends upon the weather: if it is hot the Apicure will evaporate in from fourteen to twenty-one days. (2) Yes. (3) No; but when they break into life it will kill the bacilli. This is why we advise perseverance with it; also, if Apicure is used, the bees will clear out the diseased cells.

[8359] *Black versus Hybrid Queens.*— I shall esteem it a favour if you will kindly advise me through the "B.B.J." on the following points:—I have five hives, four of which I want to re-queen this autumn. (1) Which do you think would be the better plan: to rear my own queens, or go in for surplus and buy queens in August or September? (2) If I rear queens, which in your opinion are the best bees, hybrids or blacks, for surplus honey (extracted)? (3) How should I proceed if I rear queens, as all my hives have supers on now?

Having heard that blacks were the best bees, I thought I would test the matter for myself last season, so I picked two hives, one hybrid and one black; the blacks being the strongest. I supered both on May 12th, and treated the two precisely alike throughout the season. When they went to the moors, the total surplus from the blacks was 118lb., from the hybrids 110lb., but when they came back the hybrids headed with a total of 150lb. for the season, and the blacks had 138lb. I think the hybrids were strongest when packed down for the winter. Both colonies were wintered on sufficient natural stores, but the blacks seem to be much the stronger now, and I have taken one super off already. I think hybrid queens don't start to lay as early as the blacks, but they increase faster when they do start. This being an ideal district for bees, as my "takes" prove, I wish to re-queen with the best queens. If I stimulated the hybrids early in April by scratching the cappings of combs now and again, do you think this would encourage the queen to lay earlier, as the stock came through the winter with an abundant supply of food, and there is early pollen here from the willow? If I could get my stocks strong by the second week in May I think (on an average) that I could work for that time to super, although I supered in April this year.—J. H. W., Mold.

REPLY.—(1) Work for surplus, and buy queens in the autumn. (2) Blacks. (3) You will find full instructions for queen-rearing in "The British Bee-keepers' Guide Book," or you could get Sladen's "Queen Rearing in England." We are sorry we have not space just now to give these particulars.

[8360] *Apple-blight.*—I have established a new apiary according to "Guide Book" directions, and have planted several choice young apple trees. In February I syringed with soda and soft soap. They bloomed in profusion, but now they are being spoiled as per sample leaf herewith. Will you kindly name the insect and mention cause and cure and prevention in next week's BEE JOURNAL? I syringed yesterday with Beta Lysol, 1 to 200 parts; was this right, please?—J. M. B., St. Austell.

REPLY.—The trees are infested with Black Aphis, commonly known as blight. Syringe the trees frequently with a solution of soft soap. Take a portion the size of a hen's egg and dissolve in a pail of warm water.

BERKS B.K.A.

A correspondent sends us the following cutting" from the *Reading Mercury*, and asks for further information:—

To the Editor of the *Reading Mercury* and *Berks County Paper*.

SIR,—What has happened to the above Society—is there any life in it at all? Surely now is the time for the Association to wake up and fit itself to receive its share of the development grants.

I do not think the Society is being energetically worked. I understand that correspondents and would-be members can get no answers to their letters.—Yours truly, COUNTRY BEE-KEEPER.

APICULTURE IN CYPRUS.

EXTRACT FROM THE "EMPIRE REVIEW" FOR MAY, 1912.

"Steps were taken towards the end of the year to develop the bee-keeping industry on modern lines. Apicultural appliances have already been imported from England, and frame hives, made locally to patterns supplied, were set up in the

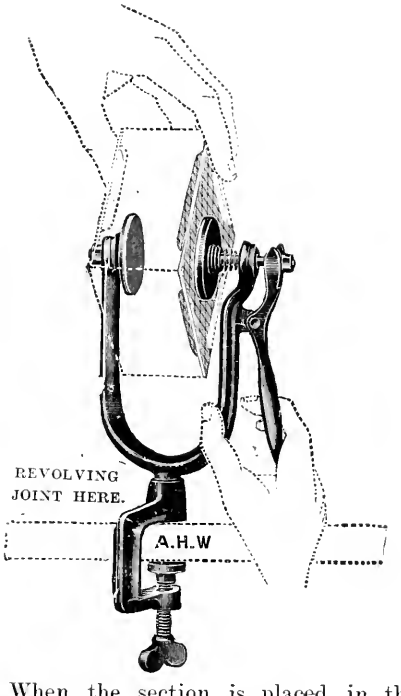
Nicosia nursery garden. Some hundreds of new hives have already been ordered from local carpenters by villagers, who have shown the utmost eagerness to take up this industry. A considerable number of such hives have already been made for distribution to selected rural schools. It is hoped by this means to encourage the industry amongst the youth of the country, and also to afford an object lesson to older bee-keepers, and wean them from the use of their primitive hives."

NOVELTIES FOR 1912.

SECTION-GLAZING OUTFIT, AND A QUEEN-INTRODUCING CAGE.

We have pleasure in illustrating a new section-glazing outfit (patented), invented by Mr. Arthur H. Wilkes, of Four Oaks, of queen excluder fame. Mr. Wilkes also sends a new Queen Introducing Cage, which he claims has never yet failed, some forty to forty-three queens having been safely introduced, yellow queens to black stocks and the reverse during his experiments.

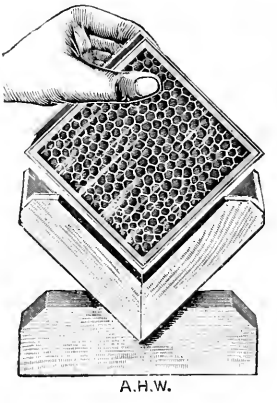
With regard to the section-glazing outfit, the following are stated to be its advantages:—



"When the section is placed in the machine both hands are free.

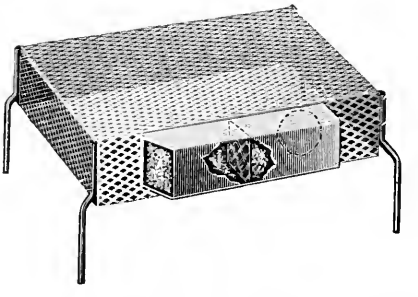
"It is so simple it needs scarcely any explanation. As will be seen, the section with the two glasses either side is placed in a fairly central position between the rubber-covered discs, which revolve, the lever is released and the section gripped securely; the whole may then be revolved in any direction desired to facilitate the fixing on of the laced paper. The discs will support a weight of 2lb., and will grip anything from $1\frac{3}{4}$in. to $2\frac{1}{4}$in. thick.

"Thirty to forty sections per hour may be glazed in faultless style, and a child can manage the machine. Price 6s. each.



"This is part of the outfit for glazing sections. The section and a glass each side is placed in position as shown, they are immediately set square, true, and level on all four sides, they are then transferred to the machine."

"The Queen Introducing Cage is automatic, and therein undoubtedly lies its success. It is made so that a card having



an opening covers the cage, the queen and bees are smoked into this opening, the cage pressed into a comb and the card withdrawn. The bees then eat their way through the candy tube. This takes some twenty-two hours, and the queen is quietly released and accepted."

BEE STINGS TO CURE SCIATICA.

A medical man describes the successful treatment of a sub-chronic case of sciatica by bee-stings. The patient was a well-built railway fireman aged 31, who two years ago, after a wetting, developed acute lumbago followed by sciatica perineuritis, and neuritis, which resisted all the usual treatments continuously applied

for six months (including severe blistering). At the end of this time, as the man, though desirous, was almost as unable to resume his work as six months previously, bee vaccination was tried. During the ensuing four weeks 64 bee-stings were inflicted along the course of the nerve. The symptoms rapidly improved, and his walk changed from a painful crippled hobble to an ordinary stride. At the end of six weeks he resumed his heavy stooping work of stoking, without pain. Two months later he presented himself to the doctor to report continued freedom from any trouble.—*Science Siftings.*

Bee Shows to Come.

June 12 and 13, at Romford, Essex. In connection with the Essex Agricultural Society, the Essex Bee-Keepers' Association will hold their Annual Show of Honey, Wax, Bees, and Appliances. **Entries closed.**

June 27th, 28th, and 29th, at Barnet.—In connection with the Old English Fair and Flower Show, the Barnet and District Bee-keepers' Association will hold a show of section and extracted honey. Classes open to all. Schedules and entry forms from G. James Flashman, Hon. Sec., 37 Falkland-road, Barnet. **Entries close June 24th.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. **Entries closed.**

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13th July.**

July 18th, at St. Albans.—St. Albans and District Bee-keepers' Association hold their Annual Show, in connection with the St. Albans Horticultural Society, in Clarence Park. Open classes, liberal prizes. Schedules and all particulars from E. Watson, Holywell Hill, St. Albans. **Entries close July 12th.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. Schedule, &c., from James H. Hadfield, Hon. Sec., Lincs. Bee-Keepers' Association, Alford, Lincs. **Entries close 14th June.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton.

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

Cambridge Mammoth Show, 1912.—Sections for Horticulture, Bees and Honey. Schedules of prizes for the above Sections are now ready, and can be obtained of the Sectional Secretary, as under. Schedules will be sent to all 1911 Exhibitors, who need not apply. Free spaces offered in Horticultural Section to Growers for Trade Runs. E. F. Dant, Sectional Hon. Sec., 17, Sussex-street, Cambridge.

WEATHER REPORTS.

WESTBOURNE, SUSSEX.

May, 1912.

Rainfall, 1·64 in.	Minimum temperature, 38 on 1st.
Below aver., ·34 in.	Minimum on grass, 31 on 1st.
Heaviest fall, ·48 in., on 21st.	Frosty nights, 0.
Rain fell on 12 days.	Mean maximum, 61·7.
Sunshine, 193·6 hours.	Mean minimum, 46·5.
Below average, 44 hours.	Mean temperature, 54·1.
Brightest day, 29th, 12 hours.	Above average, 2·3.
Sunless days, 1.	Maximum barometer 30·330 on 25th.
Maximum temperature, 70 on 12th.	Minimum barometer, 29·505 on 15th.

L. B. BIRKETT.

BARNWOOD, GLOUCESTER.

May, 1912.

Rainfall, 2·37in. on 13 days.	Percentage of cloud at 9 a.m., 54; ten mornings overcast, two cloudless.
Above average, ·42 in.	Prevailing wind, S.W.
Heaviest fall, ·59in. on 21st.	Percentage of wind force, 10.
Total to date, 12·63in.	Barometer, daily mean, 30·07; highest, 30·38 on 25th; lowest, 29·49 on 15th.
Last May, 6·26in.	Remarks.—A month of normal weather on the whole. Bees flying freely except on five days.
Mean maximum temperature, 63·4; ·4 above average.	Relative humidity, 72 per cent.
Warmest day, 10th, 71·7.	
Mean minimum temperature, 45·7; ·3 below average.	
Coldest night, 1st, 33·5.	
Mean temperature, 54·5; normal.	

F. H. Fowler (F. R. Met. Soc.).

Notices to Correspondents.

W. H. (Hampstead).—*Dead Grubs thrown out of Hive.*—The bees are evidently short of food, and this is causing them to cast out the brood.

H. T. (Eccles).—*Excluder over Entrance of Hive.*—If you place the excluder either way the workers can pass through, but it is best placed with the slots at right angles to the entrance. The queen will be unable to pass whichever way it is used.

H. G. KEMP (Somerset).—*Bee-keeping in New Zealand.*—Bee-keeping is an important minor industry in New Zealand,

and at the Government apiary, near Hamilton, Auckland, students are instructed in keeping bees on commercial lines. You should study the Australasian Bee Manual, by I. Hopkins, late Government Instructor of New Zealand. The *Australasian Bee-keeper* is a monthly bee-paper published by Messrs. Pender Bros., West Maitland, New South Wales, at 6d. per copy.

Honey Samples.

Miss E. D. (Hexham).—We cannot tell you the source from which the honey has been gathered, as you sent it in a bottle which had contained peppermint, and this flavour predominates. The colour of your sample is good, density fair. What it is worth in sections it is difficult to say, as much depends upon filling and sealing.

T. C. (New Forest).—We cannot say more than that the honey is sweet. It has neither aroma nor flavour.

Miss E. E. B. (Bristol).—The honey is a very nice sample from fruit blossoms.

Suspected Disease.

Enquirer (Blandford) and C. H. E. (Kings Lynn).—The bees show every sign of "Isle of Wight" disease.

J. H. W. (Pewsey).—The bees show signs of "Isle of Wight" disease.

A. H. (Gravesend).—The bees are suffering from "Isle of Wight" disease.

L. H. (Hampstead).—We cannot trace disease in the two drones sent.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

CHESHIRE'S "Practical Beekeeping," perfect condition 2s. 6d.—MISS O. GRIFFITH, Brynaber, Abergele, Denbighshire. v 225

WANTED, clean copy of "How to Keep Bees," by Anna B. Comstock.—DR. PADBURY, Axminster. v 228

A 4GALL. BARREL BUTTER MACHINE, on stand, and Butter Worker for same, by Bradford; nearly new pair of Yokes, all complete, £3 10s., or near offer; would exchange for Bees and Hives; can be seen any time.—PEARSON, Nurseries, Grange Hill, Chigwell. v 229

"BRITISH MOTHS" (Morris's), four volumes, as new, with 132 plates, containing nearly 2000 specimens, all coloured by hand; offers.—KENWARD, Station-street, Lewes. v 227

OVERSTOCKED; 12 shallow supers, with full new sheets drone base foundation, wired, warranted healthy, 3s. each, great bargain. Approval.—VICAR, Sancton, East Yorks. v 207

NEW SECTIONS, few good, 9s. dozen.—A. SIMPSON, Chalfont St. Giles, Bucks. v 215

100 GOOD empty wood Hives, nearly new, 6s. each, fitted with frames and rack, complete, clear from any disease; also a few dozen section racks, 9s. dozen; also Heather Honey Press, cheap.—MANAGER, Harrison Farm, Pickering v 206

EXCHANGE, day to week old chicks for Bees or Honey. — BECK, Scosthrop, Bell Busk. v 208

WATER-COLOUR SKETCHING CIRCLE, monthly folio, first-class critic, few vacancies, half fee for this year 4s.—Apply, HON. SEC., Well Close, Stocksfield, Northumberland. v 209

STRONG Stock of pure Italians, young Queen, covering ten frames, and working in super, in good modern Hives, with excluder and rack of sections, 35s.—DR. WOOD, Rotherham. v 210

REMOVING.—For sale, cheap, sound Hives, clean shallow combs, ripeners, frames, Queen rearing Hives and cages, Bee Guides, crocuses.—Apply, J. CHAWNER, Desford, Leicester. v 211

WANTED, secondhand Extractor, Cowan or Taylor pattern preferred, to take sections or frames.—PENRUDDOCKE, Wylye, Wilts. v 212

12 STOCKS for sale owing to removal.—VARLEY, 26 Park-road, Bingley. v 213

FIVE superb 1911 Queens for sale, end of June, 3s. each, disease unknown in apiary.—AITKEN, Carmichael, Schoolhouse, Thankerton. v 222

WANTED, steady young Joiner, experienced in beehive or similar work, good at machinery, and quick, bee-keeper preferred; give full particulars.—REDSHAW'S, South Wigston, Leicester. v 221

W.B.C. hanging section racks, 3s., with frames; Wells' Hive, with lift, 12/6; good standard frame Hives and lifts, 4s. 6d., 6s. 6d., cash with order, or deposit; all clean, well painted, immediate despatch.—W. WOODS, Normandy, Guildford. v 224

6½LB. SWARM, hived May 31st, on frames; first offer.—GILARDI, 9, Junction-road, Croydon. v 220

APIARIAN and Appliance Maker, up in show work and sales, requires engagement with appliance firm, or in apiary.—H., "B.B.J." Office, 23, Bedford-street, London, W.C. v 219

BEE BOOKS.—Huber, Bevan, Huish, Taylor, Bagster, and others, from 1s. each.—REV. A. HEADLEY, Rectory, Alresford, Hants. v 218

7 14lb. tins of Granulated Honey, 6d. per lb.; sample 2d..—W. JOHNSON, The Cross, Melbourn, near Royston. v 217

FOR HIRE, a "Herrod" demonstrating tent, 10s. 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand, W.C.

FOR SALE, or exchange for Bees, &c., six good black Airedale and Spaniel Puppies, will make good workers or guards, &c., price 12s. 6d. each.—Apply, W. A. ALLFREE, Talbot Inn, Mansfield. v 99

CAN SPARE STRONG HEALTHY 10-FRAME STOCKS young Queens, 25s.; Nuclei, 1912 Queens, 3-frame, 12s. 6d.; 4-frame, 14s. 6d.; carriage forward, boxes 2s. 6d., returnable.—CORNALL, The Schools, Minster-in-Thanet. v 105

SURPLUS 1912 pure English Black Queens, 4s. each, immediate delivery; Sladen Carniolian Hybrids, 5s.—WHEATLEY, Spa Apiary, Hinckley. v 109

THREE strong healthy Stocks, in strong hives, one Observatory Hive, with Swarm, and all accessories, for sale.—DOELL, Laburnum Grove, Beeston, Notts. v 111

Editorial, Notices, &c.

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

Queen-Rearing.—Dr. Kramer says in the *Schweitzerische Bienenzeitung* it is very important that the eggs and larvæ from which queens are to be reared should be put at the side or beneath unsealed brood, as the nurse bees, which are abundantly supplied with food, will then take care of the brood. Should there be only sealed brood in the combs when the piece of comb containing the eggs and larvæ is added, the bees are apt to clear out the cells.

How to Recognise the Hive from which a Swarm has Issued.—When a number of colonies are kept, it is frequently difficult to tell from which of the hives the swarm has issued. M. F. Karlos says in *Le Rucher Belge* that immediately after a swarm has left, a number of bees will be found on the ground in front of the hive. These are the very young bees, who are unable to follow their companions in their flight. Another way is to place, say, twenty bees taken from the swarm into a tumbler containing a little flour. The tumbler may then be covered with a cloth, and towards evening the bees are taken a little distance from the hives and liberated. After flying round a few turns they will make straight for their old stand.

Behaviour of Bees during an Eclipse.—We read in the *Revue Eclectique d'Apiculture* an account of the behaviour of bees during the eclipse of April 17th last. The writer says that even before the commencement of the remarkable phenomena due to the eclipse, the bees seemed very uneasy. Towards eleven o'clock, the foragers re-entered the hives in large numbers, just as they do on the approach of a storm, and from eleven to one o'clock activity ceased entirely. During this time, those bees not fortunate enough to get into their hive were lying about everywhere, on the roofs, on the ground, and attached to the outer walls. They appeared as though struck by some malignant air, although the day was very hot. When the eclipse was ended the bees seemed to recover and continued their work lustily in the afternoon. The *Progrès Apicole* reports a similar observation, and the editor says: "In fact, we may say that light plays a very important part in the activity of foragers whose organs of sight must necessarily be strongly affected by an eclipse of the sun."

The Hygienic Value of Honey.—M. Navarre, writing in *Le Chasseur Français*, says that we should eat a good deal of honey, for it is the best means of keeping well. Pure honey is a wholesome aliment of the highest value. It requires no special work of insalivation or stomachial digestion, for in its natural state it already contains the necessary requirements for absorption and assimilation, consequently, for this reason it imparts health. Digestion, which not only has an influence on the mind, but also on the body, depends principally on the nourishment. Pure honey never causes indigestion. A few spoonfuls of honey taken at breakfast every morning warm and strengthen the whole body. For this reason M. Navarre recommends it more especially to persons getting on in years, whose natural body heat is often failing. In order to attain a good old age, toast dipped in milk sweetened with honey should be eaten every morning. This was the favourite food of our ancestors.

Recipe for Apifuge.—M. Bourgeois gives the following recipe in *L'Union Apicole*: Melt in a vessel surrounded by hot water 200 parts by weight of lard and 100 parts of beeswax. When dissolved, remove from the fire and add 5 parts of liquid formol and 50 parts of essence of eucalyptus or balm. Thoroughly mix. This should be rubbed on the hands and face, and will prevent pain from stings of bees or mosquitoes.

Death of Bernhard Rietsche.—The German bee papers announce the death of this bee-keeper, whose name is especially associated with the foundation press bearing his name, and largely used in Germany and other countries. Very few, however, know how talented he was and to what extent the advancement of bee-keeping in Germany was due to him. B. Rietsche was born on November 26th, 1855, in Altdorf (Baden). He was a hairdresser by profession, and when sixteen years old went abroad to earn his living, and spent much time in Switzerland. In 1879 he settled in business as a hairdresser in Bieberach. He heard from Mehring that he was manufacturing wooden plates for making sheets of comb foundation, and the idea occurred to him that it would be better to have moulds made of metal. His ingenuity devised the first metal mould in 1883 and in 1909 he sent out the fiftieth thousand, improvements being effected all the time. It was not long before Rietsche developed into a manufacturer, and gave up his former business to devote all his attention to his manufactory, which gradually grew in size, as orders increased. He was a "self-made man," and rose from poverty to wealth entirely by his own industry and perseverance. The "Rietsche" press, so universally used by bee-keepers in

Germany, is illustrated in "Waxcraft,"* and consists of a lower plate having a border round it, into which the molten wax is poured. The upper plate is then pressed down as tightly as possible, the superfluous wax being forced out at the sides. The impressed sheet of wax is removed and trimmed to size.

AMONG THE BEES.

By D. M. Macdonald, Banff.

THE PROSPECT OF LEGISLATION.

The need for legislation has been proved over and over again. The benefits an Act for the suppression of bee diseases would confer on our craft have been demonstrated clearly times without number, yet we have some doubters with whom I would like to deal at an early date. The prospects of legislation were never brighter, because it has been proved to the Minister of Agriculture that there is sore need. Not only bee-keepers, but also seed-growers, flower-growers, and fruit-growers are urging on the good cause. At present colonies are going under by the thousand, and the scourge is not confined to isolated districts, but is pretty general, as a study of the "Answers to Correspondents" columns clearly shows. Mark, although this illustrates the general prevalence of the pestilence, it is my opinion that these are not a tithe of the total of even the readers of the "B.B.J.," and not one in a hundred of the bee-keepers throughout the country. Many prefer to keep their sore trouble to themselves, and many go on hoping that the disease will cure itself. Vain hope! Somebody wrote last summer that the fine season would put an end to the evil. The idea was childish. Nothing but the most drastic treatment will have the least effect. In most cases I feel that we should *kill to cure* Everything loose should go into the fire, and the most rigid disinfection of the hive proper should follow.

Microsporidiosis.—Is the name justified? Undoubted samples of diseased bees were examined for me last year, and *Nosema apis* was not found. That this parasite is discovered in very many specimens is no proof that the source of the trouble is *Nosema*. I trust that Dr. Graham-Smith and his able body of investigators will keep an open mind while carrying on their experiments during 1912. Bee-keepers owe them a deep debt of gratitude for what they have already done, but much more must be accomplished before their labours will bear any practical fruit. I value the Board of Agriculture's report very highly, but the greater part of Section II. is thoroughly irrelevant, and to the casual reader gives an entirely false impression as to past experiences of somewhat similar troubles—most of the quotations being entirely unconnected with the subject under discussion. The substance of Section X., "Treatment and Prevention," should be printed as a tract and issued broadcast gratis by the Department of Agriculture as one of their free leaflets.

Bee Literature.—What nation has given us most bee-books? Undoubtedly the German. I wish we had a reliable bibliography. Examining the best available, I was greatly impressed with the predominating position held by our cousins in the Vaterland. In the sixteenth and seventeenth centuries, when bee literature was in its infancy, all other Continental countries in my list show nine bee-books against Germany's eleven. During the eighteenth century she claims the large total of 144 volumes, whereas all other countries lag far behind with only 54. The compilation from which I have drawn my figures stops short at 1870, but for that period Germany again leads the van, with 200, against 129 for all other nationalities. This gives for the three periods 355 and 192—a marvellous preponderance! In the scientific study and elucidation of the subject Germany is particularly rich.

It is interesting to find that in the earlier two centuries named our own country more than held its own, turning out twenty bee-books, the exact number of all Continental countries. The eighteenth century shows twenty-nine, and in the early part of the nineteenth they show the respectable total of seventy-four. Something would have to be allowed for the fact that earlier bee-books would be more easily get-at-able when compiling these lists. And they are evidently incomplete as a true and reliable bibliography.

Knowledge.—"Not intuition, but the slow uncertain fruit of an enchanting toil." The poet who wrote this line must surely have been a bee-keeper! There is no royal road to knowledge of bees and their ways. It has to be built up slowly and securely step by step. And, too often, what we fancy we know is proved by facts to be only supposition. The unexpected crops up eternally in bee-keeping. Yet we go on toiling at this most enchanting of occupations. "I, too, have sought to know," but I find the best system is still to keep an open mind, and I go on gradually gleaning knowledge. I never meet a company of bee-keepers but I learn something new, much of it not in "the books," for, indeed, the best education is obtained from knowledge derived from experience—your own, or some other man's. Tennyson wrote: "This fine old world of ours is but a child yet in the go-cart." Isn't it marvellous that there is no finality in any branch of our craft?

* "Waxcraft," by T. W. Cowan, BRITISH BEE JOURNAL Office.

Take up an old edition of "The Guide Book" and read it page by page beside the latest, and you have another book! The same holds true of "The A.B.C. of Bee Culture" and "A Modern Bee Farm," showing that progress is the law of life.

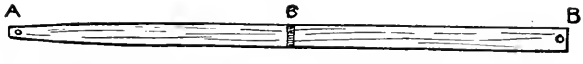
That is the great advantage to one really anxious to keep well abreast of the times in prosecuting our calling, of a weekly bee-newspaper. Bee-books fall out of date, but such a publication as the BRITISH BEE JOURNAL keeps its readers well posted up in all that is latest and best in the apicultural world, both at home and abroad.

A CHEAP HIVE SCALE.

By Herbert Mace.

The only certain way of ascertaining whether a colony of bees is making progress or not is to weigh it occasionally. In making such observations as are recorded from time to time, the method is to weigh the colonies every day and make a careful record of the gain or loss on each occasion. By this means it is easy to find out such things as the comparative surplus, producing powers of different races, the effects of various kinds of weather, and other problems which crop up at intervals.

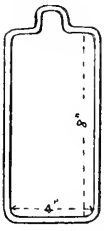
It is necessary to have a scale which will weigh a hundredweight at a time, for a full colony with its hive and supers will sometimes weigh even more than that. The best form of scale is one on the steelyard principle, with a low platform on which the hive can stand permanently, as the labour of lifting the hive on to the ordinary form of portable scale is very considerable. The drawback to this kind of scale is that, being made of metal, it is not suitable for outdoor work, and when more than one hive has to be weighed the observer must either have a scale for each or indulge in some Herculean feats of strength each time he weighs the hives. Moreover, the cost is in most cases out of proportion to the object for which the scale is required, and I am therefore describing the one I use, which has the advantage of portability and cheapness, while requiring a minimum of labour.



Underside of beam, showing one end shaved down. C. Groove burnt across centre. A.B. Position of hooks.

The first requirement is a long beam, preferably of ash, 6ft. in length and about 3in. in diameter each way. Exactly in the centre (it is of the utmost importance that the exact *centre* be found) a line should be drawn on two opposite sides, which line must be made, by means of a square, at a true right angle to the edge of the wood. On one of these lines a semi-circular groove must be cut, care being taken that it comes on each side of the line equally. It should be about half an inch deep, and is most easily made by heating a round iron bar and running it backwards and forwards along the line until the right depth is attained. Now, in the centre of the line on the opposite side an iron rod must be inserted. This rod is to act as a pointer to indicate when the beam is balanced, should be about 4in. long, and must be inserted at right angles to the wood.

The next requirement is an iron fitting of the shape shown in the diagram. This

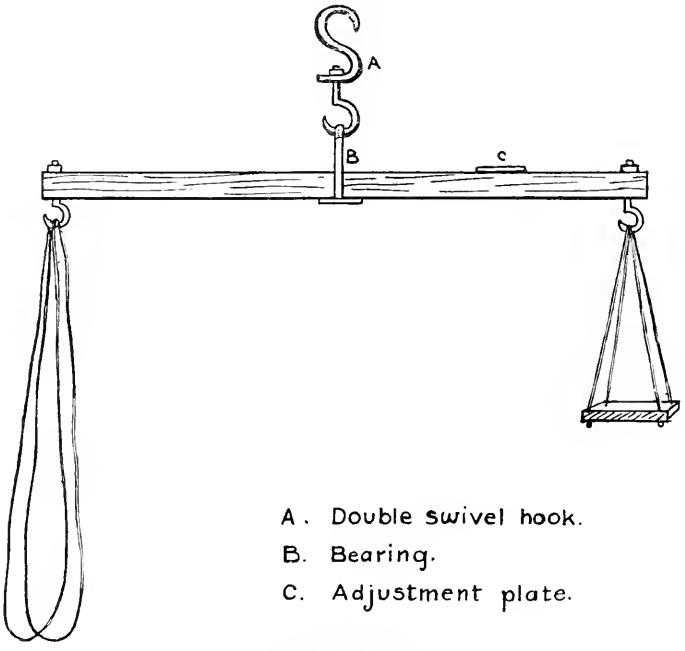


Bearing of ⅜in. round iron rod.

will be made by a blacksmith for a few pence, and the material should be of iron of about ⅜in. diameter, so that the bottom part will lie in the groove in the beam neither too closely nor too loosely. Pass this fitting under the beam, and, being satisfied that it fits in the groove properly, secure it there by screwing a metal plate firmly over it.

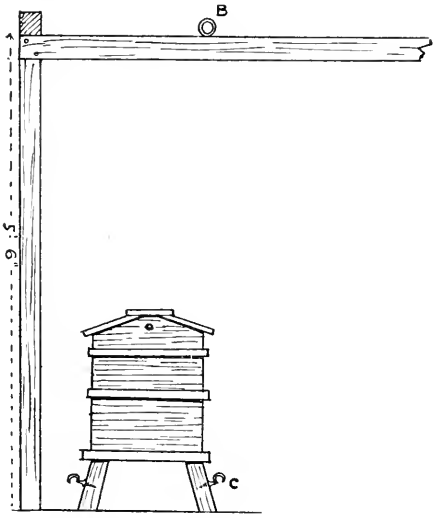
Now, a good piece of 1in. board, about 12in. by 8in., must be procured and holes bored near each corner, through which to pass strong cord—the domestic clothes-line will do admirably. Two pieces, each about 9ft. long, will be required, and each of these should be threaded through two holes, the ends of all being tied together. This forms a sling on which to rest the weights. Now get a strong butcher's swivel hook. This will cost about a shilling, and should be capable of standing three hundredweight. Fix this up on a rail or doorway temporarily and hang the beam by its "bearing," as I will call the iron fitment, on it. If your work has been done well the balance will be fairly accurate, but even a small difference will send one side or the other down. You have, however, to take into account the weight of the sling, so this must be hung on one end, and on the other weights should be put to counterbalance it. Then the sides of one end of the beam (it matters not which, but it is the side which the sling will eventually occupy)

should be sawn or planed away, until the weight of that side, with the sling, is pretty nearly equal to that of the untouched side. Exact accuracy is not important so far. Now at each end of the beam a strong hook must be firmly screwed, and for greater security should be bolted on at the top. Now hang your beam on its hook again and put the sling on the thin end of it. On the other hook a length of rope sufficient to make a four-cornered sling for the hives must be placed. It will be unlikely that the beam balances exactly, so a plate of metal must be procured and laid on top of the side which goes up. It will only need to be very small, for by moving it along the beam it will have more or less effect on the balance. When it is in such a position that the beam swings easily and comes to rest with the pointer in the exact centre of the bearing it should be screwed down firmly. When everything is firmly fixed the beam is complete.



THE BEAM COMPLETE.

Now the place where the hives which are to be weighed stand must be provided with a framework on which to suspend the beam. Four corner posts will do for two hives, but a longer stretch will require them at intervals. The ground plan shows the suitable distance for these: 2½in. or 3in. quartering will do. The posts should be 5ft. or 6ft. high, sufficient, at any rate, to allow the hives to swing clear of the ground. Long rails of the same stuff should be nailed on top of the posts, and these must be braced together at the ends by pieces nailed on top. A piece of gas piping about 2in. diameter is rested transversely across the rails, and can be rolled along until it comes into position for each hive.



The weights required are a full set up to 56lb. Each hive to be weighed must have hooks screwed into each leg, as wide apart as possible, so that there is no danger of the hive toppling over when swinging. The sling should be made in

two loops, the ends being tied together, and when the loop at each side is passed under the two hooks the weight will be automatically adjusted.

All this sounds, perhaps, a somewhat clumsy contrivance, but in practice I have found it very expeditious. I prefer an assistant when weighing, just to be handy in case a hive shows signs of overturning, but I managed alone for a long time, until one evening, when it was beginning to rain heavily and I was in a hurry, I carelessly omitted to pass the sling under one hook, and when I put the weight on the other end the hive heeled over. Before I could rescue it, it was on its back. Naturally, the bees came out to see what was the matter, but I righted it again and no harm was done.

It is almost needless to say that light, single-walled hives are best for these experiments, the W.B.C. being rather clumsy for the purpose.

It will be found that this scale turns, even when fully loaded, to a couple of ounces, but it is as well to say that it must not be used for commercial transactions, unless one wants the weights and measures man on one's track.

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Correspondence.

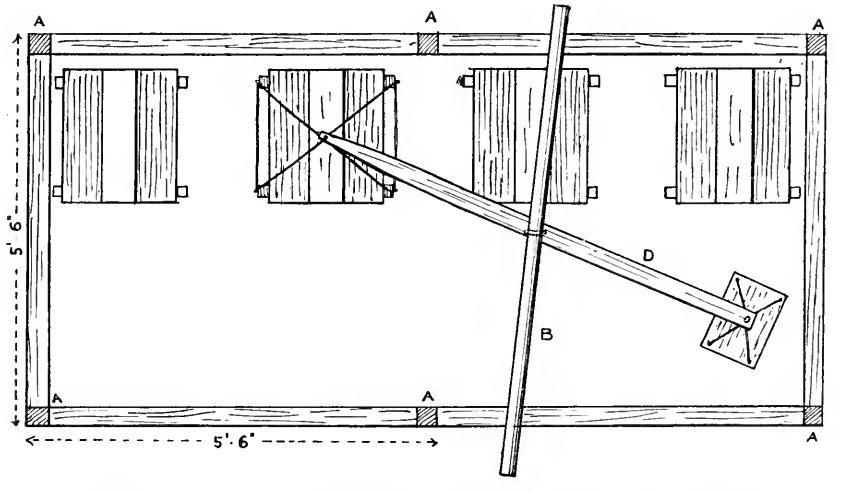
The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ROSS-SHIRE NOTES.

[8472] *June*, like the preceding month of May, has so far been a honeyless time for northern bees. We have had neither swarms nor honey, and although fields are white with clover, continued cold, wet weather makes feeding absolutely necessary. Last year the end of May was not too soon for supering, and completed sections were taken off in early June. As yet I have not put on a section. They are on hand ready for immediate use, but until the dearth is over, sections are better off the hives. All that can be done meantime is to feed steadily and extend the brood-nest, so that there may be a large force of gatherers when the honey-flow does come.

The colony to store a surplus under unfavourable weather conditions should not have a large amount of brood to care for, neither must it swarm, or even be allowed to think of swarming.

In the case of a powerful stock rearing



GROUND PLAN OF WEIGHING GROUND FOR FOUR HIVES.

A.A. Posts. B.B. Roller on which to support beam. C. Position in which to screw hooks into hive legs. D. Beam showing how hook is adjusted to enable hives to be weighed successively. For the two right hand hives the bar is run to the left and the beam swung round.

brood in two sets of frames, as several of mine are doing, I should contract to a single storey on two or three frames of brood, filling up with partly-stored combs or foundation, the removed mass of beeless brood being placed on a weaker colony, and it also similarly swarmed soon after. This means supering only non-swarming extra powerful stocks, having a gathering force largely in excess of their brood. Then, after putting on a rack of sections, there is no need for moving it until it is taken off altogether.

Directly the bees have *started* storing in the first rack put a second one on; when that is taken to, a third, and so on, putting the empty super on top always. The only inducement required is a section of newly-built comb in the centre of each rack In this case the easiest way is the best, and it works equally well in good and bad seasons alike.—J. M. Ellis, Ussie Valley.

THE COMB CAPPING MAGGOT.

[8473] I am anxious to complete my investigation into the life history of the above larva, and if any reader of the "B.B.J." who notices its tunnels in the cappings in his hives would send me some of the cappings soon after they begin to appear I would be much obliged to him. The burrows are made on the inner side of the capping, which externally presents the appearance of being covered with minute cracks. No web is produced, as in the case of wax-moth caterpillars. So far the burrows have been found only in the capping of honeycomb, and they frequently disfigure sections. At the Dairy Show some years ago most of the sections were disfigured by it. The larva is most active in June and early July. Affected cappings examined in August seldom contain it. It is a dipterous larva, possibly of the genus *Phora*. The mischief seems to be done before the comb is removed from the hive.—F. W. L. Sladen, F.E.S., Ripple Court Apiary, near Dover.

CROSS-PURPOSES.

[8474] Mr. Crawshaw is quite right (page 225) in finding fault with my pedigree of Banat and Golden cross bees. From the details I gave it *does* appear incorrect, as I omitted to say that not only the Banats, but also the Goldens are hybrids (a first cross, and all three-banded)—hence the "Black" element in my young queen, *not* from the father's side as Mr. Crawshaw suggests, since the Banat drones are, I take it, from the laws of parthenogenesis, pure, their sister bees being the first cross.

No doubt, as Mr. Crawshaw says, the Black bee in many parts of the country has a taint of foreign blood. My object was not to produce fresh crosses of that species, but to breed a hybrid strain containing as little black element as possible, springing from two races, each hardier and more prolific than the native bee. The children of this queen have now been flying for two or three weeks; they are mostly three-banded (some two), but the bands are more orange-coloured than Italians; they seem hard workers and are quite good-tempered.

"Isle of Wight" disease is now reported within ten miles of my apiary, so it is probable ere long my bees will have their stamina tested by its dread presence. —H. E. Scrope Vixer.

BEE DISEASE LEGISLATION.

[8475] It was not my intention to write upon this subject, which so many of your correspondents have dealt with admirably, but the remarks reiterated almost weekly by Mr. Woodley have so exasperated me that I cannot keep silence. The arguments he has all along put forward against legislation are so childishly petulant and utterly selfish that it is difficult to believe they come from a bee-keeper of such experience.

Mr. Woodley mentions (page 233) Foul Brood Acts having failed to cure bees of the disease where legislation is at present in force. Assuming that to be so, can Mr Woodley give us any estimate of the amount of good the working of these Acts has done, and the amount of disease they have prevented and cured, or any idea of the condition in which bee-keeping in these countries would be in at the present time had these Acts not been in force?

If there had been no crying need for legislation, does Mr. Woodley suppose these countries would have demanded it, and would they have the bee diseases laws revoked now? I guess not. I spent a night two years ago with an expert under the Act in Ireland, and he told me that in a year or two his district, which was badly affected with foul brood when he commenced touring, would be clear of the pest. Thanks to stringent legislation, rabies, pleuro, rinderpest, and like contagious diseases are now practically unknown, and why foul brood could not likewise be stamped out passes my comprehension. Mr. Woodley has repeatedly tried to throw odium and ridicule upon experts, and yet he recently quoted the words of one who reported only two per cent. of diseased colonies in his district, as an argument in support of his theory that there was no need for legislation. Does that advance his theory that experts carry and spread foul brood germs? On the contrary it shows what can be done by these maligned, but valuable, officials

in checking the ravages of the disease. But I am concerned most about the districts where there is no association, and no expert (and there are hundreds of such in England and Scotland), where disease is rampant and where nothing is done through lack of knowledge to cure or remove it.

Mr. Woodley talks complacently about his bees being as healthy as they were twenty to thirty years ago, and because such is the case he coolly tries to stir up opposition to a long delayed measure which has been framed to give assistance to the bee-keeper who cannot keep his bees healthy because they are surrounded with hives rotten with disease and which he cannot touch because they belong to a neighbour. I could plant at the present moment a hive or two in such a condition (and I am minded to do so, if only to bring him to his senses) within 200 yards of Mr. Woodley's apiary and defy him to touch it. With legislation in force I could not attempt to do such a thing. Yet, as matters stand meantime, hives teeming with disease are being bought by people at sales (who would look askance at them if you said that bees were liable to disease), and planted next door to a healthy apiary.

How can bee-keeping progress under conditions such as these? Although the apiaries of England and many in Scotland through importation are being decimated by that scourge known as the "Isle of Wight" disease we are advised by Mr. Woodley to leave things as they are, to take no steps to eradicate disease, to allow the blighting influences to work their sweet will, and thus destroy one of the most delightful of Nature's studies, because, forsooth, his bees are healthy and need no physician.

I trust the bee-keepers of England and Scotland will rise above such a contemptible attitude, and show their approval of the proposed Bill by using every legitimate means to get it recorded upon the Statute Book without delay.—In Earnest, Morayshire.

BERKS B.K.A.

[8476] If "County Bee-keeper" (page 237) will kindly apply to the Secretary of above Association, 161, King's Road, Reading, he will have his enquiry promptly attended to; he will also find that the committee are quite aware of their prospects of a grant from the Development Funds. He will also find that experts have visited all known bee-keepers in two-thirds of the county during the past two years; the remaining one-third will be visited during the forthcoming autumn.—D. W. Bishop Ackerman, Hon. Sec.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Starters or Full Sheets (p. 215).—Here again has Mr. Mace inadvertently read more into my note than its intention. Perhaps he will kindly read it again, for I have simply dealt with his own statements. I do not accuse him of advocating the use of starters, but dealt with the argument solely from the view point of the supposed saving, which I considered as outweighed by the disadvantages enumerated. Let us consider this economy fairly. A sheet of super foundation is $4\frac{1}{4}$in. wide, and this allows of fastening into the section sawgate. Where the foundation is waxed into the section, as done, I suppose by both Mr. Mace and myself, a narrow strip may be cut off. Suppose these strips were to be thrown into the melting-pot for use in waxing—an admirable use—then their cost would be the difference between the purchase price in the sheet and the selling price of ingot wax, say 1s. per lb. at the outside. Taking Mr. Mace's figures, 580 starters weigh 1lb., hence 580 sections must be "started" to save one shilling! But the value of these strips is really less than the price paid for the sheet, so that the saving is correspondingly affected. But even were no disadvantages alleged, and the wax used for attaching the sheet ignored, a gross saving of 58grs. per section being conceded, then fifty sections must be started to save one shilling, an amount easily recouped by about one extra section per two racks, or its equivalent.

Other Topics (p. 215).—Mr. Mace misses the point about comb being "reserved" for breeding. Drone comb above an excluder is often reserved for this purpose in spite of the fact that the queen cannot reach it. He further says that natural comb requires as much fixing as foundation. Maybe, but the point is that the bees often do not fix it so well. They are apt to leave beeway, particularly in the lower half of the section. I use bottom starters after Dr. Miller's plan, and my sections are frequently attached all round without a pophole. Mr. Mace's statement that a super full of drawn combs and full sheets is warmer than one with starters is hardly apropos, and not invariably true. As to the starters providing more room than full sheets, the difference is too trifling for criticism. But if there be no wonderful difference observable between starters and full sheets, *vide* Mr. Mace, one would expect to find him an advocate of the former. This, however, is not the case, and he merely uses them to effect an economy which I have endeavoured to show is illusory. Mr. Mace is, however, right about my comment upon the tree incident. It was not intended to be taken seriously. There is, however, a practical

discrepancy between "a great deal of time spent in trying to get the bees out" and an auger hole 3in. deep.

Scales in the Apiary (p. 215).—Useful things, no doubt, but if an expensive instrument were bought it would be well to have the colony in a bee-house to protect the scales. How would a "scaling" ladder serve the purpose, if balanced beam fashion, with weights to hang from the rungs at the free end? It may not be generally noted that scales are often found upon the floor-board of the hive, involving a considerable wastage of wax. And, alas! scales of disease often occur in the combs themselves. Would that we could always make a short way with them.

Swarm in a Wall (p. 217).—May I suggest to "J. A. G." that one way of dealing with such a case would be to nail a board over the hole in the boarded wall. This board should have a channel behind it, to bring the entrance conveniently low, the bees escaping by a hole through the board. When the bees were accustomed to the new entrance, a Porter escape might be nailed over it on a good flying day. Then hang a nucleus hive having brood in it, with the entrance close to the escape. Later, introduce a queen, and leave until the wall be drained of bees.

Young Queen Wanted (Advt. p. v.)—That beautiful White Star queen in the issue of May 30th is, in my copy at least, covered with blots which look like *Braula Cœca*. I usually look for her majesty with admiring eyes, so Mr. Simmins will no doubt not take it amiss if I suggest that he re-queen the stock advertisement, as I feel sure that the old lady is worn out with work.

Queries and Replies.

[8361] *Stock not Advancing.*—I shall be glad of your advice in the following case:—I have a stock of bees which is neither losing nor gaining in strength since the spring. There are five frames covered with bees, and I cannot increase them any more; there are also about two frames of brood. I have tried several plans, including putting two full sheets of foundation in centre of brood-nest. The bees just hatch out the brood and start in the centre again. If I was to put a top swarm on it after taking the queen away, leaving the brood and bees for the swarm, would that make the desired change? A reply through the BEE JOURNAL will oblige. —D. A. C., Lanarks.

REPLY.—The fault is with the queen. Remove her and put in a swarm, as you suggest. Be sure that the stock is healthy before doing so.

[8362] *Feeding Over Section-rack.*—On May 22nd I examined one of my colonies and found all ten frames crowded with bees, a good quantity of stores, brood in all stages, and some eight queen-cells in the centre combs; also a good number of drones. I then removed two frames and substituted two fitted with full sheets of foundation, which nine days later I found two-thirds filled with honey, pollen and brood. Then I put in a rack of sections. The next ten days were wet and cold, bees flying very little, and just beginning to draw out the foundation in one or two sections. Two days ago I began feeding them, putting the feeder on top of the rack: the bees took the syrup eagerly, and are now hard at work in the sections. (1) Is this a good plan, and if so would it not be a good policy generally to feed the bees in the early summer through a rack of sections—at any rate, until they have got all the foundation in the sections drawn out ready for storing honey? (2) Does the presence of six to a dozen dead bees (workers) per diem in front of the hive necessarily represent more than the average mortality from natural causes in a colony which otherwise appears to be flourishing?—BEGINNER, Strathpeffer.

REPLY.—(1) It is not advisable to feed over the rack of sections, for no matter how carefully it is done, some syrup is bound to be stored in them. Remove the rack and give food in a rapid feeder. When taken down, replace the rack. Repeat about every five or six days if weather continues unfavourable. (2) The death-rate is quite normal.

[8363] *Using Porter Bee-escape.*—When placing the section racks upon my hives I never use a queen excluder, as I think it hinders the bees in their work and encourages swarming. Consequently, when removing the honey, I have to take out the sections one by one and brush the bees off, as I am afraid if I use a Porter Bee-escape and the queen happened to be in the section rack she would not be able to descend with the bees, and might get lost. If I could use the escape it would save time and trouble, and I would like to know if a queen can pass through without injury? Also can the drones do so? I find much useful information in the reply columns of your paper, and take this opportunity of thanking you.—"GRATEFUL."

REPLY.—Both queen and drones can pass through the Porter escape without injury, but personally we would use an excluder.

[8364] *Adding Bees to Stock.*—I want to add a pound or two of bees to a hive, say in the working time. (1) If I shake some bees off the comb of the stock to be increased and mix them with the new

bees and run all in together, would they safely unite? (2) I suppose it is always safer to dust with flour? (3) Would one-third or one-quarter or less of the stock's bees be enough? (4) It would doubtless be best to operate in the evening, but is that quite essential?—J.M.

REPLY.—(1) The better plan will be to take out, say, four combs from the hive to which you wish to introduce the bees, shaking them clear of bees; place these in a temporary hive at the side of the stock. Run the bees into this hive in the usual way. (2 & 4) Let them stay for a couple of days, then dust both lots with flour, and interspace the four frames with the new bees in the old hive. You can unite at any time. (3) The quantity of bees will depend upon the object you have in view.

Bee Shows to Come.

June 27th, 28th, and 29th, at Barnet.—In connection with the Old English Fair and Flower Show, the Barnet and District Bee-keepers' Association will hold a show of section and extracted honey. Classes open to all. Schedules and entry forms from G. James Flashman, Hon. Sec., 37 Falkland-road, Barnet. **Entries close June 24th.**

July 2 to 6, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. **Entries closed.**

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13th July.**

July 18th, at St. Albans.—St. Albans and District Bee-keepers' Association hold their Annual Show, in connection with the St. Albans Horticultural Society, in Clarence Park. Open classes, liberal prizes. Schedules and all particulars from E. Watson, Holywell Hill, St. Albans. **Entries close July 12th.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. Schedule, &c., from James H. Hadfield, Hon. Sec., Lincs. Bee-Keepers' Association, Alford, Lincs. **Entries close 14th June.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton.

August 5th (Bank Holiday), at Cambridge. Honey Show in connection with the Cambridge Town and County Mammoth Show Society. All open classes. Silver and bronze medals of the B.B.K.A. to be competed for; also another silver medal and three special hives. This show also includes dogs, poultry, pigeons, rabbits, cage birds, flowers, fruit and vegetables; also grand programme of sports and motor racing, &c. Balloon ascent and double parachute descent, by Captain and Miss Spencer. Special engagement of the Black Dyke Band. Mr. W. Herrod, F.E.S., expert to the British B.K.A., will lecture and demonstrate in the bee and honey department during the day. Schedules for bees, honey, and horticulture from Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge-street, Cambridge. **Entries close Thursday, August 1st.**

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction Demonstrations, &c., &c., to be held in the Mechanics' Hall Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

Notices to Correspondents.

J. B. (Bewdley).—*Using Formaldehyde.*—The strength of the solution for treating foul brood should be ten per cent. If placed in tubes, as you suggest, you must secure them so that the bees cannot get inside and drown. You can obtain formaldehyde of the proper strength from this office, at 1s. 6d. post free.

E. H. C. (Worcester).—*Bee-keeping in Rhodesia.*—The Secretary of the South African Bee-keepers' Association will be able to give you the best information on this subject. Address: Mr. H. D. Mannington, Box 3653, Johannesburg.

E. G. (Headingley).—*Artificial Increase.*—You can divide the stocks as suggested, and with proper attention the bees will rear a queen and become a strong enough stock for wintering. The other lot should also build up into a strong stock before winter. The Secretary of the Yorks. B.K.A. is Mr. W. E. Richardson, 14, Carter Mount, Whitkirk, Leeds.

NEMO (Bungay).—*Using Apicure.*—Yes, that is the proper way in which to put Apicure in the hive there is no need to split the cube into two pieces. Renew every fortnight or three weeks, according

to state of the weather; if cool the longer period will be often enough.

Honey Samples.

B. (Lewes).—The honey is from sycamore. Colour and consistency are both good.

H. J. (Wales).—Sample, though of good consistency and flavour, is too dull in appearance for show purposes. It is from sycamore and hawthorn.

Suspected Diseases.

Bochlwyd (Bangor).—It is not fighting that has caused death but "Isle of Wight" disease.

X. Y. Z. (Llandudno).—There is nothing worse than pollen in the comb. No disease at all

J. J. (Moffat).—The comb is affected with foul brood in its first stage.

F. B. (Cardigan).—Both pieces of comb contain foul brood. You can either treat by the starvation method or use Apicure.

C. H. (Elmdon).—The bees have "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ¼*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

10CWT. of the finest English Honey for sale, 28lb. tins, 14s.; sample, 2d.—HARVEY, Stratton, Evercreech, Bath. v 243

SPLENDID healthy Stock of English Bees, on 12 frames, in new hive, 32s. 6d.; also Stock, in 11 frame hive, 30/-, ready for supers.—T. WOOD, 21, Shirley-street, Saltaire, Shipley. v 242

MAN, staid, reliable, no encumbrance, understands bees and poultry thoroughly, desires place, modest remuneration; two stocks for sale.—T. NORMAN, c/o Mr. F. Green, 24, Albion-street, Weymouth. v 240

WANTED, run Honey; sample, quantity, and lowest price.—A. JENSEN, Hornchurch, Essex. v 244

GENTLEMAN'S CYCLE, Reynolds' tubing, Perry's free wheel, Royal hubs, rubber pedals, roller lever brakes, 3-coil saddle, Michelin covers, guaranteed tubes, lined green and gold, new, every part guaranteed, £3 17s. 6d. Approval. Lady's, 3s. 6d. extra.—REYNOLDS, Williamthorpe-lane, Chesterfield. v 245

DOVETAILED SHALLOW FRAMES, 3 dozen, 2s. 6d.; new W.B.C. section racks, complete, 2s. 9d. each; secondhand ditto, 1s. 9d.; Taylor's new wax mould, 1s. 6d.; new Canadian feeder, 1s. 6d.; large new skeps, 8d. each; new rack of 10 shallow frames, 1s. 9d.; Fowler's fruit-bottling outfit, new, complete, quantity bottles, 12s. 6d.; Bramford treadle mowing knife sharpener, good condition, 5s. 6d.; good light granulated honey, 28lb. tins, 12s. 6d.—R. JOHNSON, Little Hinton, Swindon. v 246

FOR SALE, 3½ h.p. Lincoln Elk motor cycle, in good condition, £10; also 2¾ h.p. Lloyd, £5 10s.—Apply, H. DRAYTON, New Bolingbroke, Boston. v 247

FEW surplus fine young Cotswold Queens, 3s. 9d. each.—BOWEN, Coronation-road, Cheltenham. v 248

TWO 4-frame Nuclei, with 1912 Queens, guaranteed healthy, 16s. each.—L. W. MATTHEWS, Great Rollright, Oxon. v 249

1912 BLACK QUEENS, 3s. 9d.; Virgins, 1s. 5d.; safe arrival guaranteed.—TOLLINGTON, Woodbine Apiary, Hathern. v 250

SURPLUS APPLIANCES. — 1000 section dividers, 6d. per dozen; 100 good empty hives, 6s. each, fitted with frames and racks; also quantity section crates, 9s. dozen.—MANAGER, Harrison's Farm, Pickering. v 251

PURE BERKSHIRE HONEY of the very finest quality, 60s. per cwt., in 28lb. tins.—ALBERT SANDYS, Drayton, Berks. v 252

TWO good hives and lifts, by Overton, 6s. 6d.; six others, 4s. 6d.; 10 standard frames and section rack, 1s. 3d. extra; 6 W.B.C. hanging frame section racks, 3s., new.—W. WOODS, Normandy, Guildford. v 253

BEE APPLIANCES, clearing, will sell cheap. —51, Lower Mortlake-road, Richmond, Surrey.

PRIME new sections, 8s. 6d. dozen; new light extracted, 56s. cwt; tins returnable.—WM. STEED, Fennes, Braintree. v 255

THREE HEALTHY STOCKS, in hives, feeders, racks, &c.—PRIESTMAN, 247, Bloomsbury-street, Nechells, Birmingham. v 238

SURPLUS EXCLUDERS, unused, 3d. each; Bee House, in sections, to hold 36 stocks, in good condition, £4; free on rail.—LEA, Vartrees, Dorchester. v 236

2CWT. last season's Honey, pure, 50s. per cwt. —LEA, Vartrees, Dorchester. v 237

SECTIONS, glazed, 9s. per dozen; unglazed, 8s. 6d. per dozen; extracted honey, 1lb. screw top bottles, 8s. 6d. per dozen; in tins, at 56s. per cwt., carriage paid.—MISS GORDON, Wethersfield-place, near Braintree, Essex. v 235

EXCHANGE, strong 6-frame Stock of Bees for good 1-frame Observatory Hive, with turntable.—A. F. KNIGHT, Kenwyn, Truro. v 234

SHALLOW FRAMES, 1 12-16 wide, wired, drawn-out combs, 6s. dozen, free on rail; also motor cycle lamp, never used, cost 23s. 3d., accept 15s. —STEBBINGS, Hilborough, Norfolk. v 233

RIPENER, holds over cwt., with large treacle tap and strainer, as new, 8s.; other appliances to clear; list.—YOUNG, 25, Dennison-street, Stockton-on-Tees. v 232

MAY SWARM, on 7 frames, with 1912 Queen introduced, first offer.—B. T., 3, Lennard-road, West Croydon. v 230

A 4GALL. BARREL BUTTER MACHINE, on stand, and Butter Worker for same, by Bradford; nearly new pair of Yokes, all complete, £3 10s., or near offer; would exchange for Bees and Hives; can be seen any time.—PEARSON, Nurseries, Grange Hill, Chigwell. v 229

NEW SECTIONS, few good, 9s. dozen.—A. SIMPSON, Chalfont St. Giles, Bucks. v 215

12 STOCKS for sale owing to removal.—VARLEY, 26 Park-road, Bingley. v 213

APIARIAN and Appliance Maker, up in show work and sales, requires engagement with appliance firm, or in apiary.—H., "B.B.J." Office, 23, Bedford-street, London, W.C. v 219

FOR SALE, or exchange for Bees, &c., six good black Airedale and Spaniel Puppies, will make good workers or guards, &c., price 12s. 6d. each.—Apply, W. A. ALLFREE, Talbot Inn, Mansfield. v 99

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, June 20, 1912. Mr. W. F. Reid presided, and there were also present Messrs. C. L. M. Eales, J. Smallwood, E. Watson, E. Walker, A. Richards, J. B. Lamb, Sir Ernest Spencer, Colonel H. J. O. Walker; Association delegates: G. W. Judge (Crayford), E. F. Dant (Cambridge Mammoth Show), G. R. Alden (Essex), W. G. Fischer Webb (Croydon), and the Secretary.

Letters, expressing regret at inability to attend, were read from Miss Gayton, Messrs. T. W. Cowan, R. Andrews, O. R. Frankenstein, A. G. Pugh, H. Jonas, Dr. Lloyd Jones, and Captain Sitwell.

The Minutes of Council meeting held May 16th were read and confirmed.

The following new members were elected:—Miss M. P. Brooksbank, Miss F. M. D. Burder, Miss E. L. Maynard, Mr. G. Wheeley, Mr. J. Thomas, Mr. R. Wright, Mr. W. Sutcliffe, and Mr. J. A. Braithwaite.

The Sussex Association applied for affiliation. It was resolved to grant the same if the Association agree to accept and abide by the conditions and rules of affiliation.

The following names of delegates to the Council meetings were submitted and accepted. Mr. J. C. Roberts (Mid Kent), Mr. W. F. Reid (Aberdeenshire).

The report of the Finance Committee was presented by Mr. Smallwood, the balance at the end of May was £245 4s. 5d., being the largest in the history of the Association. Payments to the amount of £31 were recommended.

The report of an examination for third-class certificates held at Romford was presented, and it was resolved to grant certificates to Messrs. T. Bird and H. G. Bull.

A vote of thanks was proposed and carried to the Apiary Committee for the prompt manner in which they had carried out their work, and it was resolved that it be now merged in the Development Fund Committee.

It was resolved that the following be appointed as the "Development Fund Committee": Messrs. T. W. Cowan, W. F. Reid, C. L. M. Eales, J. B. Lamb, A. G. Pugh, A. Richards, E. Watson, E. Walker, and Sir Ernest Spencer.

Colonel Walker moved, and Mr. Judge seconded, that the duties of the Development Grant Committee having been completed, they be thanked most heartily for their work and dissolved.

This was carried unanimously.

It was resolved that the Development Fund Committee be asked "to draw up a scheme to be laid before the Council for expending the Government grant in regard to organising bee-keeping in Counties, and to continue the necessary work of the experimental apiary, and that they further be authorized to expend a sum not exceeding £150.

The judges nominated by the Shropshire Association were approved.

Examiners and judges were approved for the Staffordshire, Northamptonshire, and Worcestershire Associations.

Examiners were appointed for the centres of Swanley, Doncaster, Somersetshire, and Cheshire.

A letter was read from the Essex Association *re* a grant from the development fund, and it was resolved that this be handed to the Development Fund Committee.

A letter was read from the Derbyshire Association agreeing to accept and abide by the conditions and rules of affiliation.

A letter of thanks for the address and congratulations on his eightieth birthday was read from Monsieur E. Bertrand.

It was resolved that Mr. Cowan, Colonel Walker, and Mr. Eales be appointed a committee to draw up a scheme in regard to the W. Broughton Carr Memorial Fund.

Next meeting of Council, July 4th, at the Royal Show, Doncaster.

SURREY B.K.A.

ANNUAL SHOW AT GUILDFORD.

The Surrey Association held their annual exhibition in connection with the Royal Counties Show at Stoke Hill, Guildford, from the 11th to the 14th of June. The bee department formed a most interesting section of the show, and the display of bees, hives, and honey reflected great credit on the able and energetic Hon. Secretary, Mr. F. B. White, who was responsible for the management of this section. There was a gratifying increase in the number of entries for competitive events, compared with those of the previous visit of the Royal Counties Show in 1904, and, notwithstanding the dire effects of the "Isle of Wight" disease in the county, the quality of the honey was extremely good. Mr. White's educational exhibit, showing the various uses to which honey could be applied, was a popular feature of the show. Many people were attracted to the stand, and to the lectures by Mr. C. T. Overton, the Association's expert. Mr. A. J Carter, of Billingshurst, acted as judge of the competitive exhibits, and made his awards as follows:—

OPEN CLASSES.

Collection of Hives and Appliances.—

1st, C. T. Overton and Son, Crawley; 2nd, E. H. Taylor, Welwyn, Herts.

Observatory Hive with Bees and Queen. 1st, A. E. C. Mumford, Redhill; 2nd, G. Steventon, Bisley.

Best Frame-hive for General Use.—1st, A. E. C. Mumford; 2nd, E. H. Taylor; h.c., C. Greenhill, Wimbledon.

HONEY.—OPEN CLASSES.

Six 1-lb. Sections gathered during 1911 *or* 1912.—1st, R. Allen, Bicester; 2nd, A. Sandys, Drayton, Berks; 3rd, Miss F. E. Barker, Barnston, Essex; c., Mrs. Charrington, Lewes.

Three Shallow Frames of Honey, gathered in 1911 *or* 1912.—1st, C. P. Maynard, Guildford; 3rd, Miss F. E. Barker.

Six 1-lb. Jars of Extracted Honey, gathered during 1911 *or* 1912.—1st, S. G. S. Leigh, Broughton, Hants; 2nd, R. Allen; 3rd, A. H. Bowen, Cheltenham; h.c., R. Blackbourn, Hoo, Minster, Thanet; c., Chas. E. Austin, Slinfold, Sussex.

Six 1-lb Jars of Granulated Honey.—1st, Miss Barker; 2nd, Miss Burder, Lewes; 3rd, R. Blackbourn; h.c., H. J. Snell, Worplesdon; c., Chas. E. Austin.

Display of Bee Products.—C. P. Maynard. F. B. White, Redhill, staged not for competition.

MISCELLANEOUS.—OPEN CLASSES.

Beeswax. — 1st, A. J. Stevens, Chichester; 2nd, F. B. White; 3rd, C. E. Austin.

Educational Exhibit connected with Bee Culture.—1st, F. B. White; 2nd, G. Steventon.

LOCAL CLASSES.

Six 1-lb. Sections, gathered during 1911 *or* 1912 *(open to residents in the county only).*—1st, Miss E. Peele, Chertsey; 2nd, A. E. C. Mumford; 3rd, A. T. Hedger, Caterham Valley; c., Mrs. H. Trewby, Streatham Hill.

Six 1-lb. Sections of any year.—1st, A. T. Hedger; 2nd, Mrs. H. Trewby; 3rd, A. E. C. Mumford.

Three Shallow Frames, gathered during 1911 *or* 1912.—1st, Mrs. H. Trewby; 2nd, C. P. Maynard.

Six 1-lb. Jars of Extracted Honey gathered during 1911 *or* 1912.—1st, A. J. Fell, Walton-on-Thames; 2nd, W. Bourne, Esher; 3rd, A. Seth-Smith, Cobham; c., M. J. Lamboll, Chiddingfold.

Six 1-lb. Jars of Heather Honey (granulated).—1st, A. Seth-Smith; 2nd, A. Baines, Bagshot.

One Shallow Frame, gathered during 1911 *or* 1912.—1st. A. J. Fell; 2nd, Mrs. H. Trewby; 3rd, M. J. Lamboll.

Beeswax.—1st, A. E. Barnes, Anerley; 2nd, A. Baines; 3rd (recommended), G. Bullen, Cobham.—*Communicated.*

ROYAL SHOW AT DONCASTER.

We are pleased to hear from the Secretary of the Royal Agricultural Society, that in several cases their own record has been beaten in the matter of entries for the show at Doncaster next month. The total entries of live stock amount to 3,022, against the previous record number of 2,943 at Norwich last year; produce 559, and poultry 1,242 entries; the total shedding covering 13,538ft. Should the weather be favourable, it ought to be a most successful show, and we expect the bee and honey exhibits staged will do credit to the B.B.K.A. and the bee-keeping industry in general. We hope to renew our acquaintance with many "B.B.J." readers and to meet old friends during the show week in the bee tent, which is a pleasant rendezvous for bee-keepers attending the show. All our publications will be on sale in the Bee Department, which is located this year immediately behind the Grand Stand.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

Increase.—In my long experience of teaching apiculture, I have found that the varying methods of increasing the number of colonies are most difficult for the novice to understand. There are so many different ways of carrying this out that he is very apt to confuse them, or else he is uncertain which is the best to adopt to suit his requirements under special conditions. To obtain the best results it is necessary to bear in mind the principles involved, it is then quite easy to carry out the work in any of its varying forms.

The novice should always remember that bees locate position, and not the hive; that it is the old queen and the old bees which constitute a natural swarm; also that successful increase can be obtained only when the stocks to be dealt with are very strong and have an abundance of either natural or artificial food coming in; fine warm weather is also an important factor in the success of the operation.

We will first take increase from a skep. Having made up our mind early in the spring that we will make an artificial swarm from the skep standing in the garden to stock a movable comb hive, we endeavour to obtain plenty of bees as soon as possible by slow feeding early in March if in the South, and towards the middle of the month if we live in the North. This will stimulate the bees; they in turn will feed the queen more abundantly, thus causing her to lay a larger number of eggs than she would do under normal conditions. Towards the end of April the hive will become crowded with bees, and if allowed to remain in this condition a

natural swarm would issue. In this way we should get the population for our new hive, providing always that we are able to be present to see the swarm issue, and to capture it. The probability is, however, that it will come out when no one is about, and so be lost, or the bees may become very excited, rise to a great height, and fly right away.

To avoid either of these contingencies it is best to deal with the bees as soon as the hive is crowded, by driving them until the queen comes up and is captured. She is then placed with a few hundred bees in the new hive, which is placed on the stand originally occupied by the skep; then, after running the bees which have been driven out back into the skep it is placed on a new stand. The field bees go out foraging, and return to the old position, join the queen, and the few bees, thus making artificially what we should get in a natural swarm—old bees and the old queen. The young bees will remain in the skep and rear a young queen. Both lots should be fed slowly for about a fortnight.

If it is desired to obtain the swarm for selling, then instead of the frame-hive, a swarm-box should be put on the old stand. This should be covered with a sack to make it dark, when the bees will enter and cluster; it can be closed up at night and despatched the next morning, the skep being then replaced in its old position.

Another simple operation is to make a swarm from one frame-hive for the stocking of another, the population is increased by feeding as described for the skep. When at full strength the combs are examined until the queen is found upon one of them, this is then put into the new hive with the adhering bees, wrapped down warmly, and placed in the position occupied by the old stock to catch the flying bees. Again, both lots must be fed. On the second day the bees in the new hive should be confined to the number of frames they cover by means of the division-board. As they increase, build out and cover the combs, more room must be provided by inserting a frame fitted with a full sheet of wired foundation in the centre of the cluster. This is repeated until the complement of ten frames is reached, when, if the season is a good one a super may be put on. The swarmed stock will thrive much better if a fertile queen can be introduced; in fact, if that is done it too may yield some surplus. If this is impossible they will rear their own queen. They can be helped in this by breaking away the walls of several cells containing eggs.

In both cases the work should be carried out about midday on a fine day, when the bees are flying freely.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

STARTERS OR FULL SHEETS—"CODDLING" BEES.

[8477] I am working my way steadily through Mr. Crawshaw's statistical problem (page 247), but the weather is really rather too warm for work of this description. Perhaps I shall be able to grapple with it better when the honey-flow is over.

I certainly did miss the point about "reservation" of comb for breeding purposes, but in any case it seems to me to matter little. If honey is coming in well, it is not likely to be indefinitely reserved, while, if the imports are light, the storage room will remain vacant in any case.

I would certainly undertake to state dogmatically that racks divided into compartments by full sheets of foundation are bound to be warmer than a vast, airy chamber of starters.

The discrepancy Mr. Crawshaw alludes to, I do assure him, is more apparent than real, as he can prove for himself if he perches on a makeshift ladder of a none too stable nature and, holding an auger well above his head, bores a 3in. hole in a downward, sloping direction into a live, sound oak tree.

I should be sorry to think that any remarks of mine hurt Mr. Crawshaw's or anyone else's feelings, and I should never cease to lament my outspokenness if it deprived me of the pleasure I always take in Mr. Crawshaw's "Cappings."

I can confidently inform Mr. Mason that the bees in the tree (page 223) were not mine, for they were Italians, and I like them "as black as I can get 'em." I do not see that the fact of a stock being sixty years in a chimney proves anything beyond the fact that they must have been a very hardy race. Presumably they came originally from an ancient skep, than which it would be difficult to find anything more "coddling" from the point of view of stuffiness.

Where I think Mr. Mason is wrong in his theory is that the kind of organism which nature endeavours to perpetuate is not the one which is most suitable to man's needs. What kind of roses, apples, strawberries, or even carrots should we get if we left them to nature? Or who

would go back to the beef and mutton produced on strictly natural lines? We have to steer our way between the Scylla of unhardiness and the Charybdis of unprofitableness, and it is, I suppose, only natural that we should run more frequently in danger of the former. Nature, I take it, would aim to produce a bee that could survive on a smaller quantity of stores. Other things being equal, that would undoubtedly be the effect of natural selection over a period of scanty seasons. On the other hand, I imagine that in good seasons the advantage would lie with races that had a strong tendency to swarm. Either of these races would not be the kind that would cause us to fall over each other in our eagerness to purchase.

I notice that "Isle of Wight" disease has come very close to me, so I begin to look with grave suspicion on every bee I see climbing a blade of grass. At present, however, everything seems to be going strong in the colonies, and if there are any diseased bees about they do not stay long enough to taint the air, for there are about a dozen toads prowling round the hives as soon as the shadows have come down.—HERBERT MACE.

BEE-KEEPING IN LANARKSHIRE.

[8478] I have been a regular reader of the "B.B.J." for many years, and do not remember having seen a report from this part of Scotland; so I thought it might interest Scottish readers to hear something of the bee industry in this part of the country.

As a good county for bee-keeping, Lanarkshire will compare favourably with most other parts of Scotland. This especially applies to the district along the valley of the Clyde. Here, extending for a distance of twelve miles, we have a "fertile region green with wood," the drive from the ducal town of Hamilton to the ancient and historic one of Lanark, "the land of Wallace," being considered one of the finest in the shire. All along this distance, side by side, the road and river wend their way in circuitous route, while sloping upwards to a considerable height on either side, fruitful orchards and acres of strawberry fields abound, hundreds of tons of the fruit being sent annually to the city of Glasgow. Here at present, and for generations past, in the little rustic villages that skirt the banks of the Clyde, is an ideal home for the honey-bee. Down in this sheltered vale, surrounded by a profusion of fruit bloom, the bees thrive and gather honey in the early months of the year, while in the higher altitudes above, a few miles away, they are weeks behind. This has led the beemen there to adopt the practice of bringing the bees from parts of Lanarkshire not so favourably situated to the Clydeside, in order to get them built up for early swarming, and for the clover and heather flow. The honey gathered here from fruit blossom is not counted upon as of marketable quality, being often dark in colour, although of a good flavour. What we look forward to is the clover and the heather harvest, more especially the latter, which we consider of all honeys to be the *summum bonum*. In fact, I have heard bee-keepers here say they "did not care a fig for a crop of clover honey," as it will not sell so readily as heather. Speaking personally, I desire both, as a "bird in the hand is worth two in the bush." However, I can vouch for the fact that many grocers and private individuals will not have clover honey, and the favourite form is run honey in jars.

As a heather district, the Upper Ward of Lanarkshire, the "Highlands of the Lowlands," as it is sometimes called, is an ideal one; the scenery in this part being magnificent—"lonesome wilds and desert moors." Thither to this "Mecca" of bee-forage the keepers of Lanarkshire betake themselves with their hives when August comes round, where, if conditions be favourable, a beautiful golden honey of exquisite quality is gathered in good quantities, for to my mind there is nothing in the way of honey more beautiful than a frame of *unsealed* heather honey glittering like gold in the snowy-white comb. Modern methods have been adopted by the majority of bee-keepers here, the straw skep being practically out of date. At present we are experiencing a very backward season. Since June came in we have had nothing but sunless wet weather, putting swarming back very much, but we are full of hope, as practically all the season is before us and clover just beginning to bloom. I may tell you that there are several large apiaries in the district, some owners having thirty and forty, and in one case nearly 100 hives. I might have told you more, but do not want to trespass too much on your space.—WM. SMALL, Hamilton, N.B.

BEE STINGS AS A CURE FOR SCIATICA.

[8479] The paragraph on page 238 of the "B.B.J." on the cure of sciatica reminds me of my experience about two years back. I was asked to overhaul four hives for a friend; one stock was not good-tempered, and I got about thirty stings on my right arm. When dressing the next morning, I said to my wife, "I cannot understand it, but I have no rheumatism in my arm, or sciatica this

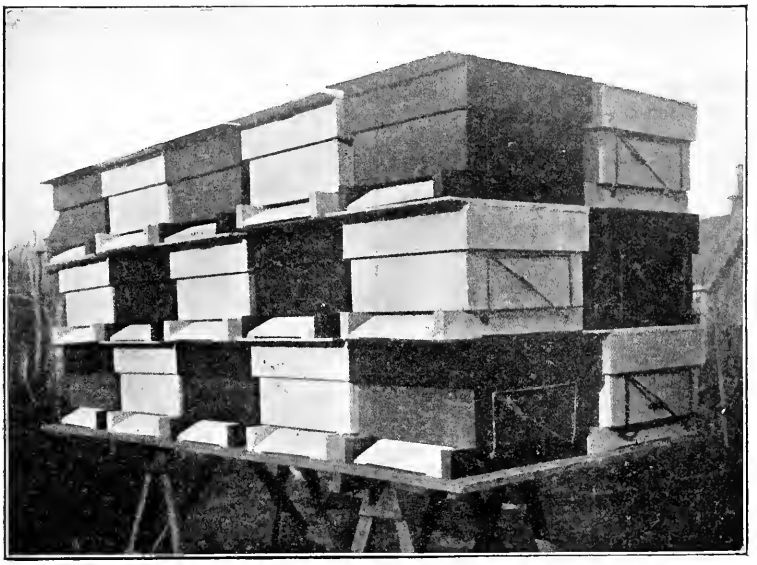
morning," and I am pleased to say that I have not had a touch of it since. I am seventy-six years of age, and I had suffered from both troubles for some weeks previous.

Useful Hints.—May I mention that for disinfecting hives, a threepenny sulphur candle, placed in a little water in a flower-pot saucer and lighted, and the hive immediately closed up, will effectually do what is wanted. To keep sections warm, use the lids of cardboard boxes made to fit tight on the rack. Try a tiny drop of seccotine at each angle when folding sections for increasing strength.—S. ALLEN, Cliftonville.

teresting to bee-keepers in general. Later I will, if you will accept it, send a revised copy of my notes on the hive.—T. D. N., Lanarks.

FOUL BROOD LEGISLATION.

[8481] I always read with much interest and have gained some knowledge from "Notes by the Way," from Mr. Woodley's pen, but I have never read a weaker paragraph than that in the "B.B.J." of June 13 (page 233). It is obviously absurd to say let us wait and see what other countries where foul brood Acts are enforced have done to stamp out foul



"T.D.N." HIVES FOR TRANSPORT.

HIVE FOR THE MOORS.

[8480] Some time ago I remarked in your columns, *en passant*, that I had evolved a special hive adapted to "transport" and other purposes, especially feeding-up rapidly in autumn.

Mr. Crawshaw, in commenting on my letter, asked for some details of this hive. I sent him some weeks ago a copy of an article I had written out on the matter, but after many days my letter is still unanswered.

In case others may feel that I shirked Mr. Crawshaw's request I am sending you a photo of thirty of my hives reduced to winter dimensions, securely fixed, and all mounted on a small garden table. Note the guy ropes which make the hive secure enough to allow it to be inverted. I call it the "T.D.N." or "Expeditious" hive. You may be able to make a print of this photograph, which will, I am sure, be interesting to bee-keepers in general. Later I will, if you will accept it, send a revised copy of my notes on the hive.—T. D. N., Lanarks.

FOUL BROOD LEGISLATION.

[8481] I always read with much interest and have gained some knowledge from "Notes by the Way," from Mr. Woodley's pen, but I have never read a weaker paragraph than that in the "B.B.J." of June 13 (page 233). It is obviously absurd to say let us wait and see what other countries where foul brood Acts are enforced have done to stamp out foul brood. I take it that legislation will be framed so as to get rid of foul brood in *this* country, and this will never be accomplished without its aid. Would Mr. Woodley, as a District Councillor, argue the same way before his Council if an outbreak of typhoid fever or diphtheria occurred in a village under his jurisdiction? Would he wait to see what other villages do, or have done, before he coped with the epidemic? (He might do so if such Acts as the Infectious Diseases Notification Act or the Infectious Disease Prevention Act were not in force.) If he did I should look upon such reasoning as arrant nonsense. First get notification, then inspection by competent, common-sense experts and inspectors; following this by cleansing and disinfection of hives, or even destruction of badly-infected stocks, with a reasonable allowance of compensation for the latter—then, and

only then, will the disease be lessened and the country eventually be free from foul brood and other bee diseases. I do not wish friend Woodley any harm, but I should like to know what his attitude would be if some careless bee-keeper with a few stocks of bees badly infected with foul brood, and probably of a virulent type, were to settle within half a mile of Mr. Woodley's apiary and if his one or two hundred stocks became badly infected. He would, no doubt, be the first one to cry out and say "That careless bee-keeper ought to be punished; he has thrown infected and rotten foul brood combs on his garden to be cleared out by my bees, and all this trouble has come upon me through another's carelessness." When will Mr. Woodley's eyes be opened to see the possibility of this state of things; for such has happened.

As a public official of many years standing, I know from experience that it is the person whose house is dirty, or one who has an accumulation of filth upon his premises who resists the appearance of the Sanitary Inspector; but the person whose premises are clean has no need to fear any visit from such an official.

Mr. Woodley winds up the paragraph in question with words which cut the ground from under his own feet, as he says: "I hear from every side that experts are powerless to help when a case of 'Isle of Wight' disease is diagnosed." And why are they powerless? Because of the absence of legislative authority. What is the alternative? Why, when the Bee Pest Diseases Act becomes law then experts and inspectors will have the power to help and suggest remedies more than they otherwise can do without the law. If the inspector appointed under the Board finds foul brood when examining hives he would point out the disease, and advise what steps would have to be taken, as his authority would be backed up by an Act of Parliament.

I, too, recommend each bee-keeper interested in the sweeping of foul brood from our midst to write to his M.P. and also the President of the Board of Agriculture and Fisheries, asking them to support the Bill when it comes before Parliament.—THOMAS WELLS.

ADVERTISING IN "B.B.J."

[8482] You will be pleased to know that the response to my advertisement, which appeared in the JOURNAL, was so large that I found it impossible to execute all the orders received. Perhaps, through the medium of your columns, I may ask for a little patience on the part of those readers who have not already received their section-cases. I have, however, now made arrangements so that there will be no further delay, and in future all orders will be sent off promptly.—A. H. BOWEN, Cheltenham.

RANDOM JOTTINGS.

By Chas. H. Heap.

SULPHUR FUMES FOR "I.O.W." DISEASE.

In the *Record* for June, Mr. F. J. Ashby (Sussex) describes how he has been employing sulphur fumes with the object of warding off "Isle of Wight" disease from two surviving stocks in his apiary. He asks, has this saved these two stocks? I have little hesitation in saying "No." At the beginning of this year I thought I had stumbled upon a sulphur cure. When the long spell of cold weather broke up and the bees took a cleansing flight, I was much perturbed by finding bright orange-coloured evacuations on the fronts of the seven colonies I have at home. I knew what this meant, and speedily destroyed the worst stock. Soon afterwards I condemned two other stocks. One evening I lifted the hives off the floor-boards and placed them over burning sulphur matches. My expectations were not realised, for next morning I found only a few bees dead and the rest "very much" alive. As it was not convenient to complete the deadly work just then, I returned the bees to their respective stands. For a time the dropping of diseased bees ceased from these hives. As a precaution, I applied a much-advertised remedy. Two mornings afterwards I found a dead queen thrown out by the worst of the two colonies, and on the third morning the queen of the other hive was a corpse. Neither queen seemed to have suffered from rough usage. The better stock raised a queen, but the end of March was too early for her to find a drone, and she was eventually lost. In the meantime, I applied sulphur fumes to the other stocks from time to time, but so far as I could discover it had no effect whatever. A third stock that had been building up very well now showed symptoms of being in a bad way. I therefore decided to destroy it. I accordingly took the queen and successfully introduced her to the stock which had raised and lost the queen. A few days later, I transferred all the brood from the hive which had supplied the queen to the hive in which she had been accepted, first brushing combs and frames over very carefully with a common disinfecting fluid diluted with warm water. All the brood hatched, and I have seen no sign of the disease about it since, although it has stood by a diseased stock on which I am experimenting with the Ayles' cure. The other stock that was put over the sulphur pit again developed the disease. I should not have related these

experiences but that I fear some may be tempted to apply sulphur fumes as a preventive of this modern scourge of the apiary. Fumigation with sulphur is cruel, and is better left to scientific investigators. I do not affirm that sulphur fumes will not destroy "Isle of Wight" disease, but it will only be done by killing the bees. In the case I have described the disease has been cured, if it is really cured, by the killing of bees. Apparently the diseased bees fell first, and then by a lucky chance the sulphur match went out. The bacilli of *Nosema apis* make their home within the alimentary canal of the bee, and I cannot imagine how sulphur fumes can reach them there.

Utility of Legislation.—Mr. Woodley inquires if someone can point to a country in which foul brood has been done away with owing to Acts of Parliament being in force. It is a safe question, if a "Yes" or "No" answer is demanded. Though the reply to Mr. Woodley must be in the negative, it does not follow that legislation dealing with bee diseases would be futile in this country. As an extensive reader of the bee literature of this and other lands, Mr. Woodley must be aware that the conditions under which bee inspection is carried out in the United States and Canada, for instance, are far from satisfactory, and that, generally speaking, thorough remedies are not always applied. We do work of this kind better than it is done in America and our Colonies, and if the provisions of a sufficiently strong law were properly carried out there would be precious little for bee inspectors to do ten years hence, so far as foul brood is concerned. Indeed, if bee-keepers could in some way be prevented from using old disease-infected appliances brood diseases could be extirpated in the more isolated villages in two years, following, of course, rigorous inspection and equally rigorous treatment. One condition must accompany the other, otherwise legislation would be in vain. I can assure Mr. Woodley that there are wide districts in England where, if a thorough examination of all stocks were made, a state of things would be revealed that would stagger the bee-keeping world. Some time ago a Midland bee-keeper told me that finding he had foul brood in a strong stock he decided to resort to drastic treatment. While he was starving the bees not forty-eight, but seventy-two hours, he well scorched the hive with a painter's blow-lamp and refitted it with new frames, new foundation, and new quilts. What was the result? Within fourteen days he found foul brood in the first batch of fresh brood—and no "disease-carrying expert" had visited the apiary in the meantime. In that district foul brood abounds. The greatest disseminators of disease are bees and bad bee-keepers, not experts. A few careless experts may spread brood diseases, but whose fault is it that they are employed, and continue to be employed? I am convinced that if certain very simple precautions are taken the risk of infection through the instrumentality of experts is negligible.

A word in reply to Lieut.-Colonel Hunter. Bee diseases inspectors might be made responsible for acts of incompetency, but such a proviso would mean a demand for higher fees.

Theory Upset by Fact.—With regard to "Isle of Wight" disease, I am inclined to think that the risk of infection is greater outside than inside the apiary. Bees, on leaving the hive, fly right away, so that the possibility of the germs of the disease being dropped from the clothing of a human visitor and being picked up by the bees, is very remote. I have seen "Isle of Wight" disease among the bees of skeppists on some of the North Berkshire Downs, in villages separated from each other by three or four miles. I heard of no one having imported bees, and some had never been visited by an expert. This rather spoils Mr. Woodley's theory, as I understand it, that the spread of disease is largely the result of inspection; it also upsets Mr. Bee Mason's idea that the non-production of wax is a large factor in the causation of "Isle of Wight" disease. The bees in these villages have had to secrete wax from time immemorial. Why are they afflicted?

Queries and Replies.

[8465] *Broodless Stock.—Foundation worked on one side only.*—(1) I hived a very large swarm on fresh foundation a week ago, and when yesterday I examined it I found the combs drawn out, covered with bees, and containing some honey and pollen, but there was absolutely no sign of brood, or even of eggs. Does this point to absence or sterility of the queen? What had best be done? (2) When examining two other hives I found in each the foundation worked out on only one side—the other side being dark and shiny. One of the hives has only just recovered from "Isle of Wight" disease, but the other was always healthy. This was the case with two frames in each hive. I hope that this does not mean more disease. I always find the "B.B.J." of great use and interest.—LANCASTRIAN BEE, Wigan.

REPLY.—(1) Are you quite sure there are no eggs? Examine again, and let us know the result. (2) The dark appearance

is caused by the cells on the other side being drawn out. Try reversing the frame, and see if the bees will work the foundation.

[8466] *Bees without food in June.*—I shall be glad of your advice in the following circumstances:—(1) My bees not being at all active, I examined the hive and found practically no honey or food except in the two outer frames. The rest were either empty or in some cases with dead young bees protruding from the cells, and many dead pupæ have been recently thrown out. There seemed to me an unusual number of drones, and I could not see a queen—although I am not experienced, and may have overlooked her. I only started bee-keeping two years ago. There does not appear to be any disease. (2) Could I with safety unite a swarm from another healthy hive, letting queen enter?—D. S. C., Kilmacolm.

Reply.—(1) Your bees require food, and this is the cause of the symptoms you mention. (2) You can run in a swarm as you suggest.

[8467] *Honey from Rubber Plant.*—I shall be very much obliged if you will kindly inform me through your paper, which I read with much interest, if the honey from the Ceara Rubber plant (*Manihot*) is of good quality or bad? A friend just tells me that his honey, after the flowering of the rubber trees, was bitter, like quinine, and he attributes it to the Ceara Rubber. Thanking you in anticipation of your kind reply.—L. W. J. Deuss, Nyasaland.

Reply.—We have not before heard of the flowers of this plant affecting the honey in the way you mention, but it would be possible to ascertain if it does so by protecting the blossoms and preventing the bees from getting at them, then extracting the nectar as it collects and tasting it We would like to hear the result, as this is the first inquiry that we have had respecting this rubber plant.

[8468] *Re-queening.—Honey Sample.*—Will you kindly give me your advice on the following:—(1) I have two stocks of bees, with old queens, and want to re-queen in the autumn, and also to increase my stocks to four. I propose to kill the old queens, and split up the stocks, giving each an equal share of honey and brood, letting each raise a queen. Another plan I have had suggested to me is to make one stock queenless and let them draw out queen-cells, and when capped over divide the two stocks, giving each a cell. (2) Will you also kindly tell me from what the enclosed honey was gathered? Your advice will be very acceptable.—S. K. H.

Reply.—(1) It would be a better plan to purchase fresh queens and introduce one to each lot after division. Of the two ways you suggest we should choose the second, selecting the best stock for queen-rearing. (2) The honey is evidently of foreign origin.

[8469] *Balling Queens. — Treating Disease.*—Can you answer in "B.B.J.":—(1) Why do the bees ball the queen? Do they expect you are going to take her from them? It says in "Guide Book," smoke the ball, or drop it into water, but neither remedy is near, specially the water on such occasions. Can you not say a little more? I close the hive quickly after throwing the carbolic cloth over the frames and knock the side of the hive to call off their attention. (2) For hives that have had foul brood in them would you say "Ayles' Cure" was suitable to paint the inside and floor-board as with the carbolic recipe? (3) Do you advise re-queening a stock that has foul brood, though far from weak, or leave the present queen to pull through?—F., Bristol.

Reply.—(1) Bees "ball" the queen usually through excitement. A simple plan is to use a bunch of grass and whip the ball, when the bees will liberate the queen. Cage the queen and put her back, for preference in a cage from which she will be automatically released by the bees eating away the food. (2) It is a much better plan to scorch the hive with a painter's lamp. (3) Re-queening will certainly help the bees to recover.

Bee Shows to Come.

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13th July.**

July 18th, at St. Albans.—St. Albans and District Bee-Keepers' Association hold their Annual Show, in connection with the St. Albans Horticultural Society, in Clarence Park. Open classes, liberal prizes. Schedules and all particulars from E. Watson, Holywell Hill, St. Albans. **Entries close July 12th.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. **Entries closed.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton. **Entries close July 27th.**

August 1st to 5th, at Preston.—Annual Show of the Royal Lancashire Agricultural Society. Honey and Bee Appliance Section. Ten open classes. £30 in prizes. Schedules from E. Bohane, Derby House, Preston. **Entries close June 29.**

August 5th (Bank Holiday), at Cambridge. Honey Show in connection with the Cambridge Town and County Mammoth Show Society. All open classes. Silver and bronze medals of the B.B.K.A. to be competed for; also another silver medal and three special hives. This show also

includes dogs, poultry, pigeons, rabbits, cage birds, flowers, fruit and vegetables; also grand programme of sports and motor racing, &c. Balloon ascent and double parachute descent by Captain and Miss Spencer. Special engagement of the Black Dyke Band. Mr. W. Herrod, F.E.S., expert to the British B.K.A., will lecture and demonstrate in the bee and honey department during the day. Schedules for bees, honey, and horticulture from Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge-street, Cambridge. **Entries close Thursday, August 1st.**

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 22nd, at Abington Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

Notices to Correspondents.

A. H. S. (Slough).—*Parasites on Bees.*—The comb contains pollen only. There is no disease. The "red insects" infesting the bees are *Braula cœca*, known as the "blind louse." They are not dangerous, but very irritating to the bees, and can only be got rid of by smoking with tobacco smoke. This stupefies them, and they fall upon the floor-board, which can then be cleaned and disinfected.

J. F. A. (Northam).—*Mildewed Combs.*—(1) If you put the shallow frames on the hive, and they are not very badly damaged with mildew, the bees will carry out the work of cleaning out the cells before storing honey in them. (2) If the boxes containing drawn-out combs are wrapped in newspaper with naphthaline in each to prevent wax-moth, and are then stored in a dry place they will keep quite well. The expense of having tins made would be too great to make it worth your while.

R. W. Wright.—*Painting Bees for Experimental Purposes.*—You might just touch the top of the thorax with a water dye, taking care that it does not run into the spiracles. If carefully done it will not injure the bees.

H. T. (Eccles).—"*Royal Jelly.*"—The creamy substance you found was chyle food, commonly called "Royal jelly," upon which the larvæ for the production of queens are fed.

Nappin (Woodstock).—*Smoker Fuel.*—Fungus is not used for this purpose; touchwood or brown paper, or anything that will cause smoke and not go out readily, is used.

F. B. (Gellifor).—*Introducing Virgin Queens.*—Introduce these in the same way that you would a fertilised one.

H. M. C. (Isleworth).—*Race of Bees.*—(1) The bees are ordinary English Blacks. (2) There appear to be no signs of disease in the bees sent.

A. D. (Willesden).—*Race of Bees.*—Both bees are the ordinary native variety.

A. C. (Devon).—*Race of Bees.*—No. 1. English with a slight trace of Carniolan blood. There is no disease. No. 2. More Carniolan blood than in the case of No. 1, and traces of "Isle of Wight" disease are present.

X. Y. Z. (Maldon).—*Buying Bees.*—It would be unwise to purchase, as the bees are evidently suffering from "Isle of Wight" disease.

A. H. H. (Edenbridge).—*Suspected Disease.*—When the bees are in the position you illustrate they are fanning. It is not a sign of "Isle of Wight" disease.

Novice (Yorkshire).—*Bees not Working in Sections.*—(1) You must wait for fine, warm weather, when, if the stock is strong enough, the bees will go into the sections. (2) It was quite right to use the smoker when putting on the racks.

A. C. (Hanwell).—*Treating Diseased Colony.*—You should use Ayles' cure.

Honey Samples.

Queenie (Fairhaven).—There is no honey-dew in the sample sent. It is from sycamore chiefly, and is worth about 7d. per pound. You should extract all this honey before the clover harvest comes.

Suspected Disease.

Horton (Staffs.), H. C. (Bramber), J. S. (Hexham), and A. J. H. (Yorks.)—The bees are suffering from "Isle of Wight" disease.

W. C. T. (Stoke).—The bees were too sticky for us to examine them, but from your description we should say the

trouble is "Isle of Wight" disease. You had better use Ayles' Cure or destroy them.

J. B. (Sussex).—The bees appear to be suffering from "Isle of Wight" disease. You might try Ayles' Cure.

H. C. (Worcestershire).—We are afraid from outward indications that the bees are affected with "Isle of Wight" disease.

V. D. (Ipswich).—The comb is affected with foul brood in its first stage. It is difficult to say where it originated, probably in the old boxes.

R. H. A. (Diss).—(1) The comb is affected with black brood. (2) The simplest way is by means of nuclei, as explained in British Bee-Keepers' Guide Book.

E. J. W. (Somerset).—The disease is odourless foul brood. Try a course of Apicure and let us know the result.

W. S. (Andover).—The comb contains sour brood.

E. J. G. (Lincoln), NOVICE (Gloster), W. S. F., and HANTS.—The bees are affected with "Isle of Wight" disease.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

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EXTRACTOR, Meadows's best make, Cowan's cog-gear, holding four shallow frames, cost 35s., accepting 26s., as good as new.—VICAR, Ulrome, Hull. v 270

WALLFLOWER, choice mixed, sow now, liberal packet 6d.—W. RIGLER, Apiary, Poole. v 269

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Editorial, Notices, &c.

REVIEW.

The Cause of European Foul Brood, by Dr. G. M. White, published by the U.S. Department of Agriculture, Washington, D.C., being Circular No. 157 of the Bureau of Entomology.—In this circular, which the author has been good enough to send us, he discusses the exciting cause of what in America is called "European Foul Brood." He believes that it is the same disease as described by Cheshire and Cheyne, and in which *Bacillus alvei* was found. Also that it is probable Dr. Burri was studying the same disease when he referred to "sour brood," in which he found "*guntheri*-forms" of bacteria which Dr. Maassen named *Streptococcus apis*. Dr. White has now encountered both *Bacillus alvei* and *Streptococcus apis* in this form of foul brood, but he has also found other bacteria, none of which he considers as the primary *cause* of foul brood. There is, however, one which he has hitherto designated as *Bacillus Y*, and now names *Bacillus pluton*, which he considers is probably the cause of the disease. *B. pluton* appears in the earliest symptoms of the disease, before either *Bacillus alvei* or *Streptococcus apis*, and although the two last-named are present, Dr. White does not consider them to be the cause of the malady. It is, however, quite possible that they may modify the form of the disease. It is satisfactory to find that Dr. White has now been able to confirm the findings of Drs. Burri, Maassen, and Zander in what we in Europe know as the "strong-smelling" type of foul brood, although in some respects this still differs from the description of what is called "European foul brood" in America. That the author should have found other bacteria is not surprising, for already a good many have been described from time to time. In 1890 Dr. Lortet found two species, but did not name them (Revue Internationale d'Apiculture, 1890, page 50). In the same year Dr. Klamann described and illustrated a species which he named *Bacillus flavidus alvei* (Bienenwirtschaftliches Centralblatt, 1890, page 17). Dr. Canestrini, in 1891, also described another species ("B.B.J.," 1891, page 499). It is probable that some of these species are those now named by Dr. White *Bacterium euridice* and *Bacillus orpheus*. "King of the lower world," for that is the meaning of *pluton*, is a formidable name for a bacillus, but it it probable that the author had its mephitic character in mind when he so named it. Dr. White has given a good deal of time to these investigations, and deserves credit for the painstaking manner in which he has carried them out.

AMONG THE BEES.

By D. M. Macdonald, Banff.

HEATHER HONEY.

This delicious sweet "of all honeys the *summum bonum*" (page 254), has of late been rather unfairly described, and two railing accusations have been bruited abroad telling in its disfavour. I have no great fear that either will do much injury to the bees, Northern bee-keepers, or to the luscious produce of our heather hills. Yet errors are best nipped in the bud, and therefore I would like to say something to counteract any evil effect.

At the recent conversazione of the B.B.K.A. both the Chairman and Vice-Chairman made an effort to give heather men a "black eye." Mr. Cowan hit gently, merely expressing a personal preference for "the milder honeys over heather honey," but he added that "a great many others held the same view." That may be true, but there is another side. Thousands of *Southerners* visit the Highlands yearly—wealthy merchant princes, business men, professional men, baronets, lords of all degrees, as well as commoners of all ranks. My experience is that almost every one of these must carry home annually from ten to one hundred sections of pure heather honey. *Not one* of them will look at our milder forms. I have tempted them again and again with beautiful clover sections—offered at from 8d. to 10d.—but they would have none of these, preferring to pay 1s. 2d. up to 1s. 6d. for *pure heather*. Even a delicious blend, offered at 1s., was rejected with contempt, although I praised it highly. In discussing the reason why all expressed a decided preference for the aroma and flavour of pure heather over any other honey, I will allow these opinions to balance Mr. Cowan's "many others," and I have no doubt they will outweigh them effectively.

I would respectfully submit that the Vice-Chairman committed an error of judgment when he weakly fell back on the words of an anonymous friend to cast a slur on honey which tens of thousands of even his own countrymen admire and appreciate more highly than even sainfoin or any other species of southern nectar. In quoting Mr. Reid's words I feel that their very biased extreme refutes itself: "If you taste honey that you would not eat yourself, that is the true heather honey." Absurd! True, he says it of southern-grown heather, for which thanks! His own personal opinion, however, is, "true heather honey has such a *rough taste*." My own personal opinion

is quite the contrary, and I again appeal to the tens of thousands of Englishmen who agree with me and who confirm the faith that is in them by paying year after year nearly double the average price for *pure heather honey*.

Gentlemen in the position of the Chairman and Vice-Chairman of the B.B.K.A. are quoted as authorities, and I think it unfortunate that they, however unwittingly, should do an injury to a very important minor industry affecting a large percentage of members of the Association.

Now, I will deal with heather honey as a winter food for bees. "Some say it is deadly, others that it is excellent," is Captain Sitwell's expressive summary of the discussion lately going on. Mr. Crawshaw is not an extreme man. He holds that *at times* it may be an unhealthy food: I won't say "No!" I will, however, further take three progressive stages of condemnation. A reply to a query some time ago expressed a preference for sugar syrup over heather honey stores. "T. D. N.," who hails from Lanarkshire, looks on it as either a slow or a rapid poison. (I wish I could get the "Renfrewshire Bee-keeper," or the "Lanarkshire Bee-keeper," to reply to him, but, alas, both have crossed the bourne!) Then comes one of the most audacious unsubstantiated heretical assertions I ever read, and that, too, written by a bee-keeper who is now acting for the Agricultural Department on the question of bee-diseases. Mr. Bullamore, on page 115, "B.B.J.," vol. xxxix., writes of heather honey: "It was considered bad policy to winter stocks that went to the heather, and such stocks were generally condemned. In heather secretions there are probably astringent principles of which bees can stand but a limited quantity without detriment." The first sentence contains a fact (so called) that I never heard of, even living among the heather as I do. The second is built on an hypothesis which is perfectly untenable. A *probability* is a statement which has to be proved.

Now I deliberately assert that heather honey is a *perfectly healthy food* for wintering on. Making this statement I acknowledge that the onus of proof lies on my shoulders. An old writer says: "If you have established a fact a second time, prove it again. If you find it established five times cease to doubt its truth. If ten times rely on it as *indisputable*." Well, I have proved the truth for twenty-five years in my own apiary, and I *know heather honey is an excellent winter food*. I go further back. For forty years I have never known it act prejudicially to bees in the old-home apiary. Both these experiences are perhaps limited, and therefore may not satisfy "T. D. N." or "W. G. B." Here is some more proof. During a quarter of a century I have been familiar with the wintering results of hundreds of stocks, and never saw bad effects follow feeding on *pure heather honey*. By seeing or hearing, I must have had the circumstance obtruded on my notice if it were a fact. In all my correspondence, which has been extensive, the idea has never once been put in words by one single bee-keeper.

Further, since this controversy has been going on I have heard from, or discussed the subject with, bee-keepers in most of the northern counties, in a majority of southern shires, and in several English heather counties, and with none of these does this new doctrine find acceptance. Therefore I hold, and I hope all fair-minded bee-keepers will hold, that the statements condemnatory of heather honey are at least *not proven*.

FOUL BROOD AS UNDERSTOOD AND TREATED IN AMERICA.

By F. W. L. Sladen, F.E.S.

The annual loss to bee-keepers in the United States caused by foul brood has been estimated at from £200,000 to £400,000. Americans are fully alive to the seriousness of this loss, and are doing everything they can to mitigate it. In a few counties in New York State the loss in 1899 was over £5,000, but by hard work on the part of four competent inspectors the loss was rapidly reduced, and in 1905 it was only £350.

These facts make the opinions on the nature and treatment of foul brood that prevail in America of considerable interest to us, especially as they differ from ours in several details. Prominent among those who are advising and guiding American bee-keepers in their efforts to control and eradicate foul brood are two specialists, Dr. E. F. Phillips, in charge of apiculture, and Dr. G. F. White, expert in bacteriology, in the United States Department of Agriculture. From time to time Dr. Phillips and Dr. White have prepared and issued bulletins on bee diseases, clearly explaining the opinions held and the best methods of treatment to be adopted. The information for this review has been extracted from three of these bulletins—*Report of the Meeting of Inspectors of Apiaries, San Antonio, Texas, Nov. 12, 1906*, issued June 17, 1907; *The Treatment of Bee Diseases*, by Dr. E. F. Phillips, issued May 6, 1911; and *Historical Notes on the Causes of Bee Diseases*, by Dr. Phillips and Dr. White, issued March 26, 1912.

Dr. White has been investigating the organisms suspected of causing foul brood for ten years, the work having been commenced in New York State in 1902. He

early arrived at several definite conclusions of far-reaching importance which are to-day regarded in America as the ground-work of the modern study of these diseases. The most important of Dr. White's and Dr. Phillips' conclusions may be summarised as follows:—Bee brood is subject to two infectious diseases, named in 1906 European foul brood and American foul brood.

In European foul brood most of the brood dies before sealing, but sometimes sunken and perforated cappings are observed; the larvæ turn yellow; the decaying larvæ can seldom be drawn out in a thread, and their smell is usually slight and at times sour. The scales into which many of the larvæ finally shrink are easily removed, and the bees carry out a great many in their efforts to clean house. This disease attacks drone- and queen- as well as worker-larvæ, and is most destructive in spring and early summer, often almost disappearing in late summer and autumn.

In this disease there is present *Bacillus alvei*, the bacterium that Cheshire and Cheyne cultivated from a sample of foul brood in 1884 (published 1885). *Bacillus alvei* is easily cultivated in the usual media of the laboratory, but when fed to brood it has failed to produce the disease. Evidence to prove that it is the direct cause of the disease is therefore wanting. In October 1908 Dr. White announced that he had encountered a rather interesting microstructure, referred to as *Bacillus* "Y," in European foul brood which had refused to grow when sown on artificial media. In the present opinion of Dr. White and Dr. Phillips the exciting cause of European foul brood remains unknown.

American foul brood usually shows itself in the brood after it has been sealed over, but the cappings are often entirely removed by the bees. The decaying larvæ becomes a coffee-coloured mass which often emits a penetrating odour like that of hot glue, and can be drawn out into a thread, which sometimes extends several inches before breaking. This ropiness is the chief characteristic used in diagnosing this disease. The scale formed by the dried-down larva adheres tightly to the cell and can be removed with difficulty. Only in occasional cases are drone and queen larvæ attacked. It is not certain that season has any effect on the virulence of the disease. The decaying matter in American foul brood is full of spores, which Dr. White found grew with difficulty in the ordinary laboratory media. He first succeeded in getting them to germinate in 1903 by placing them in a special preparation made from bee larvæ. The new bacillus thus obtained was referred to in a paper published in January 1904 as *Bacterium* "X," the name being later changed to *Bacillus larvæ*. In 1907 pure cultures of *Bacillus larvæ* were obtained by means of a preparation of bee pupæ, and healthy colonies were inoculated with them, with the result that the brood developed the symptoms of American foul brood. The decaying brood in the disease thus produced contained the numerous spores always found in brood that has died of this disease, and from it pure cultures of *Bacillus larvæ* were again obtained. Here, then, was proof that *Bacillus larvæ* was the cause of American foul brood.

The symptoms of the two diseases vary somewhat, especially those of European foul brood, but the bee-keeper can in most cases tell which disease is present without a bacteriological examination. The two diseases are considered entirely distinct from one another, and a colony does not, as a rule, suffer from both at the same time. Each disease causes enormous loss in America, but whereas European foul brood had not, up till 1907, been reported from any State west of the Mississippi river or from the South, American foul brood had been found in every State in the Union.

The so-called "black brood," which caused great loss in New York State a few years ago, was investigated by Dr. White and pronounced to be nothing but European foul brood.

It is stated that European foul brood is more infectious than American foul brood, but it yields to some kinds of treatment better, and sometimes disappears of its own accord, which seems not to be the case with American foul brood.

The main treatment of both diseases is the same—shaking the bees off their combs into a clean hive supplied with starters of foundation (if honey drops out of the combs the bees are shaken on to newspapers, which are placed in front of the hive and afterwards destroyed), destroying the combs, and disinfecting the old hive by scorching with fire. Surplus honey is boiled. A second shaking four days later, though practised by some, is not advised as a rule. The disinfection of hives with chemicals is not recommended, as the ordinary strengths used are valueless for the purpose. Disease rarely reappears; if it should, the treatment is repeated. Feeding the bees with syrup medicated with drugs is stated by Dr. Phillips to be not of the slightest value in the treatment of American foul brood. For neither disease do American bee-keepers in general place any reliance upon drugs, either administered in the food or as a spray for the combs, or to evaporate in the hive.

Italian bees seem to be better able to resist European foul brood than any other race, and requeening with vigorous young Italians is recommended as additional or

preventive treatment for this disease, but it is not certain that race of bees has any effect on the virulence of American foul brood. The Alexander method of treating European foul brood without destroying the combs by dequeening, and then, after twenty days, introducing a cell containing an Italian queen ready to emerge is recommended with reserve.

In *The Treatment of Bee Diseases* no mention is made of the comparative ease with which, it is believed in this country, foul brood can be cured in its early stages before spores have formed.

In neither disease, say Dr. Phillips and Dr. White, are adult bees infected, so far as is known. As regards queens, Dr. White stated in 1906 that "where *Bacillus alvei* is found in the ovary, or in our cultures made from the ovary, the organisms occur very seldom, and the probability is that they get there through contamination in making the cultures rather than from being found in the ovary itself." The common means by which both diseases are spread is contaminated honey.

At the conference of apiary inspectors at San Antonio in 1906, Dr. Phillips made the interesting remark that "it is a matter of common observation that European foul brood becomes less virulent in any given locality within a few years."

We, in Europe, have always recognised two types of foul brood, the one being often referred to as a strong-smelling, and the other as an odourless form. It might be supposed that the strong-smelling kind is the same as American foul brood, and the odourless form is the same as European foul brood, but the reverse appears to be the case, for Dr. Burri, a Swiss investigator of high reputation, in a paper published in October and November, 1904, stated that he found the strong-smelling variety contained *Bacillus alvei*, while the non-stinking type, which he referred to as the ropy form, he found produced an organism difficult of cultivation which he came to the conclusion was a new one. Dr. White, indeed, believes that in the foul-smelling type Dr. Burri was studying European foul brood, and in the odourless type American foul brood. In the summary of what is now understood about brood diseases in Europe, given by Mr. Cowan in the twentieth edition, published last year, of *The British Bee-Keeper's Guide Book*, the description of our strong-smelling foul brood agrees with Dr. Phillips' and Dr. White's description of European foul brood, except in its strong smell and in the scale being generally adhesive, and that of our odourless foul brood agrees with Dr. Phillips' and Dr. White's description of American foul brood, except in the absence of smell, the scale being also stated to be adhesive.

A third brood disease, called "sour brood" has lately been recognised in Europe, and has been carefully studied by Dr. Burri, who, in a paper published in January 1906, remarked—I quote from Dr. White's translation—that "the larvæ attached are characterised by (a) more or less noticeable sour odour, (b) comparatively pale dirty yellow colour, and (c) a great resistance of the chitinous covering, which allows the dead larvæ to be lifted intact from the cell as a moist mass." The larvæ were found by Dr. Burri to contain forms resembling the bacterium *guntheri*, which is found in sour milk. This organism was seldom found alone, but was almost always associated with *Bacillus alvei*. Dr. White thinks that the conditions referred to by Dr. Burri as sour brood and stinking foul brood are probably but one disease, European foul brood.

[We would like to add that a great deal of confusion has been caused by giving new names to the two types of brood diseases, and calling them "European foul brood" and "American foul brood," and it is to be hoped that European bee-keepers will continue to call them "strong-smelling" and "odourless," as these names clearly designate the characteristic difference in the types as found in Europe. They both differ from the two types found in America, which are there considered as separate diseases not affecting a colony at the same time, but in Europe Dr. Maassen has shown that both types may not only exist in the same colony, but also on the same comb. No account was taken in the pamphlets to which Mr. Sladen alludes of sour brood (*Streptococcus apis*), which is generally found in connection with the "strong smelling" type of foul brood, not only in separate cells but both *Streptococcus apis* and *Bacillus alvei* may occur in the same larva. (See Guide Book, fig. 123, page 175.) This alters the appearance of the decomposed larva, and, according to the proportions in which they are associated, the decomposing mass may be pap-like, or of a gluey, slightly ropy consistency. The sour smell noticed by Dr. Phillips is no doubt due to sour brood associated with *Bacillus alvei* in what is called in America "European foul brood." In Europe, the scales, although they adhere to the lower side of the cell, differ in appearance, for in the strong-smelling type the scale is *smooth*, while that of the odourless type is *rough*, a characteristic of this form of the disease. These differences, in addition to those already mentioned by our esteemed correspondent, justify us in retaining the old names, more especially as Drs. Burri, Maassen and Zander all agree respecting the symptoms of foul brood as found in Europe. From a circular just published, and which we review on page 261, it will be seen that Dr. White has now been able to find *Streptococcus apis* in so-called "European foul brood."—Ed.]

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8483] The month of June has been characterised by very unsettled weather, and sections have filled very slowly. However, the past week has been an improvement, and we are getting swarms both at out and home apiaries, and have also secured some fine queen-cells, which will be our mainspring of success for another year (D.V.). I have dispatched swarms to all four quarters of the kingdom during the past week; only one or two timorous ones have cancelled their orders owing to the prevalence of "I.O.W." disease in the southern part of England. One bee-keeper, whose apiary of a few frame-hives some distance away a travelling expert considered were slightly infected with "I.O.W." disease, ordered another 150 sections yesterday, and said his bees had never done better; they had a field of sainfoin left for seed, on which they were hard at work.

After a swarm has issued take off the rack of sections, place same on a clearer, spread carbolised cloth over frames, and then cut out all queen-cells but one, leaving this in a good central position. Now return supers, and in the early evening return most of the bees, leaving the queen and a few bees in the nucleus hive.

I am sorry to have exasperated our Moray friend (page 246), but, curiously enough, by the same post as the "B.B.J." came to hand I received two long letters from beyond the Tweed thanking me for the stand I have made against legislation for bee disease. If "In Earnest's" family was ill and he knew his physician's family was suffering—aye, was being decimated by the same complaint which the said doctor could not keep within the precincts of his own threshold—would "In Earnest" have much faith, or rely on a cure at the hands that could not clear out disease from his own household, or shall I say apiary? Again, I use those long-tried foreign examples as showing the futility of Acts of Parliament to cure bee disease, except by *drastic methods* and full compensation; and with our present helplessness in curing "I.O.W." disease and the great possibility that travelling experts, notwithstanding every precaution, may carry the disease from apiary to apiary, the risk is too great to have forced upon us against our own interests and will; and I earnestly hope the Board of Agriculture will allow the matter to stand over at least till the scientists engaged in the investigations have found out the cause, if not the cure, of "I.O.W." disease. I also hope Mr. Runciman, whenever he takes bee diseases into consideration, will, in equity to every bee-keeper, at least make the Act permissive, and make it a notifiable disease.

May I remind the Secretary of Berks B.K.A. (page 247) that some members complain of not having received their copies of *Record* for some time. They say at one time they received two bee papers, now none at all.

I am sorry to hear that bees have been doing badly in the North this season. A friend in Dumfriesshire wrote me in May and again since mid-June to the effect that, though he has fed continuously, his bees are in a worse condition as regards stores than they were a month ago, though the hives are full of bees—an army waiting for a chance to work.

I notice Mr. Ellis works his supers in exactly the opposite way to my method. He puts his on top; I always place my second rack under the first one, then under the second one, and I get but few unfinished sections. Possibly his method may suit his particular case, but I should expect my best early sections to become somewhat travel-stained by the end of the season. I rarely have more than two racks on at one time. When No. 3 is put on No. 1 comes off for market.—W. WOODLEY, Beedon, Newbury.

BEES IN BRITISH EAST AFRICA.

[8484] A friend of mine is shortly returning to Nairobi, British East Africa. He wishes to try, if it is possible, to domesticate the native bee, and is taking out a modern hive for that purpose. At the present time bees are kept in large numbers by the natives in hives made of wood or bark usually cylindrical in shape, which are placed either in trees, or, failing these, in the roofs of their huts.

To obtain the honey, the bees are killed; the comb is generally boiled to separate the wax, so the flavour of the honey is quite spoilt. Honey and wax in many districts are the chief articles of barter. The former is largely eaten by the natives themselves, the latter exported to the coast. I should be very grateful if you, or any readers of the "B.B.J.," could give me some information regarding the honey bee of the Uganda Protectorate, such as:—What is the diameter of the "worker" cell? Does honey-gathering go on during the whole twelve months? Is it likely

that the Italian or British honey bee would live in that part of the world?—H. Bigg-Wither.

[The species of bee cultivated is probably *Apis unicolor*, which makes similar combs to the ordinary honey bee. It differs in appearance, being slightly smaller than *A. mellifica*, with yellowish hairs, those on the thorax being brown, the pubescence of the abdomen being of the same brown tint, with narrow lighter rings, which often disappear in aged specimens. The queens have reddish-brown legs, whereas the workers have black legs. The bees work all the year round, and drones are bred on and off at all seasons, although they are partially killed off when food begins to run short. *A. unicolor* is much more gentle to handle than *A. mellifica*, but swarms are much more difficult to hive. We should think the climate would be too hot for either Italian or British bees.—Ed.].

A VALUABLE VAGRANT COLONY.

[8485] I thought you might like to put this curious incident in the "B.B.J." as it may be the means of others obtaining honey in some similar way.

I, being a small bee-keeper, was informed that a strong colony was located in an oak tree, and had the offer of driving them. However, all my attempts were in vain. The bees are located in the stem between the two main forks of the tree; on returning home I was discussing the situation with one of my father's men, who knows a little of the ways of bees. He suggested putting a skep over the hole (the radius of which is about 2in.). This we did on May 24th, and filled the crevices with cement and covered it up warmly on Saturday last, June 22nd. I went with him to see what was the result, and to his glory, and my surprise, the skep was full of comb and honey and packed with bees. He got another skep and put it on top, and hopes to have it filled also. I may add it looks very quaint with the two skeps fastened together with sticks, string, &c. I thought this might interest some of the readers of your useful journal.—F. Old, Blandford.

MICROSPORIDIOSIS.

[8486] The note by "D. M. M." in "B.B.J." of June 20, p. 242, moves me to write on this much-discussed subject, for I also have sent bees to Cambridge from diseased stocks, first last February, when three hives were affected, showing the well-known crawling symptoms. These hives died out a few days afterwards. Then, again, some seven weeks ago, when another hive began to show signs of the disease, though it had been treated with Ayles' "Isle of Wight" cure. Both times the bees showed no signs of *Nosema apis*. Not all of these diseased hives showed signs of dysentery, so that is obviously not an invariable symptom. The last attacked hive still survives, and only occasionally now (say once a week) are bees to be seen on the grass around unable to fly. Perhaps the Ayles' Cure may save them yet. — Depontibus, Cheshire.

HYGIENIC VALUE OF HONEY.

[8487] The paragraph, "The Hygienic Value of Honey," by M. Navarre in last week's "B.B.J." (page 241), is, I consider, so valuable as an advertisement that I venture to make the following suggestion:—Assuming no copyright difficulties, have it reprinted in poster form, say 12in. by 18in., and retail it at a nominal charge to all bee-keepers, and when these send their produce to some dealer, let them enclose a copy with the consignment, requesting it to be prominently placed in their shop windows. This would surely be of mutual benefit. Also let it be largely circulated amongst public schools, boarding houses, and other establishments. I for one would certainly be pleased to take some copies for circulation.—An Amateur.

SOMETHING LIKE SWARMS.

[8488] I had two swarms on Tuesday, the 18th June, which weighed 13lb. and 12lb. respectively, the largest I have ever known. One of the parent stocks was on thirteen frames in brood-nest, and had a rack of twelve shallow-frames on top, which had been extracted once, and were full again; the other stock was in a Wells' hive.—R. Brown, Somersham.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Where to Stand (p. 222).—Do these directions consider the case of frames running parallel with the entrance? It is, no doubt, easy enough to manipulate from the side of the hive, where frames run at right angles to the entrance, but with the parallel arrangement the natural position would seem to be the rear of the hive.

Coddled Bees (p. 223).—Does not Mr. Mason's argument almost suppose that the bees at Bletsoe Castle did not mate with domesticated bees for sixty years? This is hardly conceivable, but, of course, the queen may have been extraordinarily long-lived! For if bees, bred in the wild from a runaway swarm, yet succumb to the winter, the breed must, on Mr. Mason's showing, have deteriorated.

"I.O.W." Disease and Izal (p. 224).—This disinfectant may be applicable to the disease, but it is not, I believe, so powerful a germicide as some other remedies used by bee-keepers; and it is open to question whether the spraying of the combs affected the case quoted. Cases have been cited where combs from a stock suffering from "Howitis" have been given to healthy bees without the reappearance of the disease. The fact is that we do not yet know how the disease is communicated.

Bees and Fleas (p. 233).—I wish Mr. Abbott's specific were more generally effective. I am fairly immune to bee poison, but certain active little friends cause me untold misery when encountered, and the small summer midge makes me its especial prey. Nettle stings, however, do not seem so bad as formerly, although the tiny spear remaining in the wound always causes irritation. Perhaps my skin is a trifle thicker than it used to be! I must have a few more bee stings to continue the protective process, so a poor excuse to visit the bees being better than none—here's to the apiary!

Allowing Drone Comb (p. 233).—Here is a point mentioned by Mr. Woodley, which I do not remember to have seen brought out prominently. He refers to the use of half sheets of foundation in the first and last frames, to provide an outlet for the building of drone comb. This strikes me as being eminently practical, but is not, I think, generally practised. Most of us place the drone combs at the outside, but do we provide for their construction? I have sometimes thought there was a reluctancy to build an entirety of worker comb. I often had good combs worked over and spoiled in the days when I mistakenly endeavoured to entirely suppress this function. I have had a good many combs built from starters only, but such combs often show drone corners, and considerable experience is a necessity to the production of good combs in this way. For drone-rearing I have used entire drone combs, and these may be made an inducement to the bees to extend the brood-nest. I mark such combs by notching the lugs of the top bar, swallow-tail fashion. This does not shorten the top bar, but declares the comb to a glance. I wonder whether ½in. or so of drone comb under the top bar in several of the outside combs would ensure the extension of the brood-nest, and the placing of extra honey in the super.

Experts and Disease (p. 234).—Whilst agreeing that every precaution approved by experience should be taken, I doubt whether any washing with carbolic soap will destroy "almost indestructible" spores. Indeed, I doubt whether carbolic soap is a more effective disposer of germs than ordinary soap and a good scrubbing brush effectively used. Opinions differ, no doubt, upon such points, and it is well to be on the safe side. But to communicate disease, an expert must convey either bacillus or spore. The first is to be found in the body of the bee, and the second is not, I think, judging from its life history, carried in the air, whilst entry is not, I think, effected through the breathing, but through the digestive system of the larva. The disease is naturally spread by robbers, and possibly by visiting bees where hives are adjacent. Cases where it is spread by the operator are usually due to interchanging of combs and bees, exposure of infected stores, or the smearing of the hand with honey. So it is important to cleanse the hands, and what they may have touched. Let it be understood that I am no advocate of lessened precaution, and I am offering an expression of personal opinion. There is little enough precaution already, but lack of it is usually due to inexperience, and is not characteristic of travelling experts, in whose defence I have written.

Queries and Replies.

[8470] *Preventing Loss of Swarms.*—I should be grateful for some advice. I have just started bee-keeping, and am, of course, taking in your paper. In the early spring I bought a weak stock, and though the bees have come on rapidly they only cover eight frames. A month ago I put a super on, having a fortnight previously given them two frames of brood foundation. To my surprise they swarmed on June 22, though there was ample room below and they had not started work at all in the supers. One of your authorities says swarming is a sign of bad bee-manship. What more could I have done? The same evening I returned the swarm to the old hive, meaning to pick out the queen and kill her, but I missed her. Will they now swarm again, and would it have been wiser to drive them into the hive through some queen-excluding zinc, and so trap her? Would it be possible to prevent swarming by fixing excluder zinc over the hive entrance, or should I buy (or make) a swarm catcher, affix early in May and leave it on until August, resting assured that loss of swarms would be impossible? Would such a course be detrimental to the work going on, and if they did attempt to swarm should I simply have to open the hive and cut out queen-cells to satisfy them? Fixing zinc across the opening would be simpler, but if you recommend a swarm-catcher perhaps you will advise me as to a good one? I am away from home all day, and if swarms do occur I

stand a fair chance of losing them. Thanking you in anticipation.—E. W., Ashby-de-la-Zouch.

Reply.—Swarming is not always a sign of bad bee-keeping but is due at times to the predisposition of bees to swarm. You did all you could, except that you should have put queen-excluder at the entrance when returning the swarm to trap the queen as you are a novice. You must not nail excluder over the hive entrance, but should make a "Brice" swarm-catcher and keep it on till about the second week in July.

[8471] *Various Queries.*—I started bee-keeping with a swarm of Ligurian hybrids in May, 1910. The first year I had no surplus honey. Last year, about June, on examining the hive, I found queen-cells, which I cut out (not wanting increase) and got 34lb. of surplus, the stock covering eight frames. At the beginning of May last the stock was on ten frames. On the 29th they swarmed and clustered on some raspberry bushes in front of the hive. I was away at work at the time, but on receipt of a telephone message I immediately went down to the apiary, but the swarm had disappeared. On opening the hive it seemed quite full of bees, and on looking over the combs I found the queen. There were also several queen-cells—one capped over—but these were left untouched. The weather was very unsettled for a week after this, but Thursday, June 6th, was rather a warm day, and the bees from this hive were all about the garden in little clusters of about twenty or thirty in each. On Sunday, June 9th, they swarmed again, and were hived on a new stand about 5ft. away from the old hive. On looking through the old hive I found a queen just breaking through the capping of her cell. I enclose a dead drone and brood which were cast out of the old hive about five days after swarming. This morning (June 16th) I found the old queen (sent herewith) on the alighting-board of the hive containing the swarm. She was not dead, but could hardly move, so I warmed her and put her in at the entrance, but the bees immediately balled her and cast her out again. I went through the hive, but could not find any other queen or queen-cells. I should state that when hiving the swarm I put in a frame of brood from another stock. I have sent off for another queen to-day. There is a queen in the old hive, but no sign of any eggs yet. I should be glad of your opinion on the following points:—(1) Why the swarm returned to the hive? (2) Why dead drone and brood were cast out, and cause of drone's death? (3) Why the swarm have cast out queen? (4) How will they raise a new one? (5) Have I done right in sending off for a new queen? (6) Will queen in old hive require to be fertilised within a given time? If so, how long? (7) The swarm is being fed. Can I get it strong enough by the time heather blooms?—Alpha, Darwen.

Reply.—(1) Because the queen had not come out. (2) Want of food. (3) It is difficult to say, as apparently the queen is all right. She walked out of the box quite nimbly when we opened it. You should have caged her when putting her back. It is quite possible they have reared another queen. (4) There should be eggs from which they will rear a queen. (5) We should have waited a little longer to see what had happened. (6) About three weeks is the limit. (7) Yes, we should think so.

[8472] *A Beginner's Swarming Difficulties.*—I shall be pleased if you will kindly answer the following enquiries. I had a swarm of bees given me in June, 1911, and to me they seem to have been doing very well. I transferred them to a clean hive, thoroughly disinfected, etc., on April 24th. I placed a W.B.C. rack of sections on the hive on May 19th, and another under this on the 24th, No. 1 being full of sealed sections. On June 5th I removed it, and found the other rack nearly full. On June 8th, about 2.30, my attention was drawn to a swarm of bees flying about a fig-tree, about 30yds. from the hive. Being a novice, I thought my stock would not swarm, as I had given the bees plenty of room to work. I tried to get the swarm to settle by the use of a garden syringe and water, but to my sorrow they flew away. I followed them some distance across the fields and lost them. (1) Do you think that swarm issued from my hive? (2) How can I tell, and by what means can I find out by outside appearance? To-day they seem as busy as ever. (3) Can I put a swarm-catcher on now? (4) Did I do right in syringing the swarm? Trusting I am not troubling you too much.—T. B. W.

Reply.—(1) It is quite possible. (2) You can find out only by an examination of the brood chamber. If you find this depleted of bees, and sealed queen-cells, or a cell just vacated, you will be certain the bees have swarmed. (3) No, you must not do this if they have swarmed. (4) Yes.

[8473] *Raising two Queens in one Hive.*—In the event of a stock swarming can I utilize the parent hive to get two queens fertilized by the following method: Place the swarm on the old site, remove the parent hive to a new one, block up about 6in. of entrance, leaving about 2in. open at either end, on the same alighting board, and place a close-fitting perforated wooden division board in centre of brood-nest, making sure that one good queen-

cell is on either side? Would both sides raise a fertile queen? If so, I could re-queen the swarm with one, and unite the two nuclei. Having used the perforated division board, would it be necessary to flour both lots on removing the board? Is this idea practicable, or must I have the bees flying in opposite directions, with two alighting boards?—To H. W., Walthamstow.

REPLY.—No. You must divide the parent stock and place each portion in a separate hive, making sure that there is a queen-cell in each.

Bee Shows to Come.

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. Extra open classes added. Schedules from W. J. Wiltshire, Maindy School, near Cardiff. **Entries close 13th July.**

July 18th, at St. Albans.—St. Albans and District Bee-Keepers' Association hold their Annual Show, in connection with the St. Albans Horticultural Society, in Clarence Park. Open classes, liberal prizes. Schedules and all particulars from E. Watson, Holywell Hill, St. Albans. **Entries close July 12th.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. **Entries closed.**

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton. **Entries close July 27th.**

August 1st to 5th, at Preston.—Annual Show of the Royal Lancashire Agricultural Society. Honey and Bee Appliance Section. Ten open classes. £30 in prizes. Schedules from E. Bohane, Derby House, Preston. **Entries close July 8th.**

August 5th, at Melton Constable.—The Annual Show of Bee Produce of the North Norfolk B.K.A. will be held in connection with the Melton Constable Horticultural Society. Schedules from Hon. Sec., D. Wardleworth, Sheringham, Norfolk. **Entries close July 29th.**

August 5th (Bank Holiday), at Cambridge. Honey Show in connection with the Cambridge Town and County Mammoth Show Society. All open classes. Silver and bronze medals of the B.B.K.A. to be competed for; also another silver medal and three special hives. This show also includes dogs, poultry, pigeons, rabbits, cage birds, flowers, fruit and vegetables; also grand programme of sports and motor racing, &c. Balloon ascent and double parachute descent by Captain and Miss Spencer. Special engagement of the Black Dyke Band. Mr. W. Herrod, F.E.S., expert to the British B.K.A., will lecture and demonstrate in the bee and honey department during the day. Schedules for bees, honey, and horticulture from Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge-street, Cambridge. **Entries close Thursday, August 1st.**

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester. **Entries close August 3rd.**

August 14th, at Wye, Kent.—11th Annual Exhibition in connection with the Wye Grand Horticultural Show. Classes to suit all Bee-keepers, great and small; two 5gs., one 6gs., 12 guinea cups in different classes. Various classes open to Kent, Surrey, Sussex, and United Kingdom. Splendid prizes and low entrance fees. Send for schedules to Mr. Alfred Lepper, Secretary, Kent Honey Show, Wye, Ashford, Kent. Note.—Schedules will be sent to competitors of 1911 without application. **Entries close August 5th.**

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 22nd, at Abington Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

Notices to Correspondents.

T. H. (Medbourne).—*Variety of Bee.*—The bee is a queen.

A. W. B. (Herefordshire).—*Drone-breeding Queens.*—No. 1 is an old worn-out queen. No. 2 is an unfertile queen. There is not much honey being stored just now, and in some places bees are on the verge of starvation, through the unfavourable weather.

C. E. B. (Kettering).—*The B.B.K.A. and Experts.*—The answer to both your queries is in the negative.

A. R. B. (Forfar).—*Badly-worked Foundation.*—The wax is pure, but too soft to stand the temperature of the hive; this has caused it to fall.

Suspected Disease.

PEEL (Glamorgan), R. C. (Maybole), R. S. (Cambridge), J. O. (Glendale), E. L. (Lee).—Bees are affected with "Isle of Wight" disease.

E. T. (Winchfield).—The bees sent were crushed to pulp and it was impossible to examine them. They should have been packed in a tin box.

R. E. B. (Cambridge).—There does not

appear to be any disease. You have evidently used the "Ayles' Cure" too strong.

A. M. (Aberdeen).—We are much afraid, from external signs, that it is "Isle of Wight" disease. Send some bees to Dr. Malden for examination.

Honey Samples.

R. E. B. (Cambridge).—We do not notice any peculiar flavour in the honey. It is a good sample worth 10d. per pound retail.

T. K. (Watford).—The honey is of good (light) colour, density fair, and of nice flavour. It is worth about 9d. per pound.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

NINE well-made dove-tailed Super Clearers, with Porter escapes for shallow frame supers, 1s. each; nineteen 10-frame Excluders, 3d. each, all good condition.—JACKSON, Duxford, Cambs. v 297

THREE or four Swarms for sale, 10s. each.—HILLMAN, Stonehouse, Glos.

A FEW choice fertile 1912 Queens, 3s. 6d. each. —SNELGROVE, Albert Quadrant, Weston-super-Mare. v 284

FOUR W.B.C. Section Racks, complete, 2s. 6d. each, guaranteed healthy.—R. B. MANLEY, Towcester. v 283

FOR SALE, pure English Honey, light, 1911; sample, 2d.—LAW, Cuckoo, Ashwell, Herts. v 281

TUITION IN BEE-KEEPING.—Lady with pretty country cottage, 30 miles London, acre lovely garden, tennis, music, up-to-date apiary, desires lady paying guest; moderate terms.—Z., "B.B.J." Office, 23, Bedford-street, London, W.C. v 279

FOUR SWARMS of Simmins's White Star Italian world-famed strain, wonderful workers, prolific Queens, bargain of the season, only 15s. each.—G. TUDOR-WILLIAMS, B.B.K.A. expert, Aberdare, Wales. v 280

FOUR large Swarms of Bees, on 8 frames, full sheets foundation, without hives, 16s. each.—THOMPSON, bee-keeper, Gowdall, Snaith, Yorks. v 278

SIX DOZEN finest quality Sainfoin white clover Sections, clean, carefully packed, safe delivery, 9s. dozen; also few Sections and Extracted, fit for keenest display.—NORTH, Cressing, Braintree, Essex. v 276

GEARED EXTRACTOR, chain drive, second-hand, 8s. 6d.; pair rubber gloves, new, 2s. 6d. —BAILEY, 25, Gaolgate, Stafford. v 275

BLACK VIRGIN QUEENS, 1s. 6d. each, free, safe delivery.—LEECH, Newland Park, Hull. v 282

SPLENDID new English Clover Honey, 60s. per cwt.; sample, 3d.—A. COX, Apiary Hall, Ridgewell, Halstead, Essex. v 294

BEE VEILS, black or white, 8d. each, post free; also net for demonstrating tent.—HARRISON, Rockville, Stapleford, Notts. v 295

A FEW Nuclei, 4 frames, 1912 Queens, 14s., healthy.—EDWARDS, 1, Wentworth-road, Croydon. v 296

EIGHT grand young laying Queens, 2s. 6d. each, worth double; unused tin feeders, 6d. each. —YIEND, Albion House, Cheltenham. v 290

FOR SALE, Nucleus, with pure Italian fertile Queen. — ANDERSON, 128, Castelnau, Barnes. v 274

1000 SECTIONS, first grade, wanted, price carriage paid home for cash.—NYE'S DAIRIES, Littlehampton, Sussex. v 259

SECTIONS or EXTRACTED wanted; exchange camera, microscope, phonograph, records, Tamlin 60 incubator, hives, appliances.—BOWDEN, Broomhill, Witley, Surrey. v 268

VACANCY for Pupil on gentleman's Bee and Poultry Farm, good home in healthy country. —BEE EXPERT, "B.B.J." Office, 23, Bedford-street, Strand, London. v 265

GENTLEMAN'S CYCLE, Reynolds' tubing, Perry's free wheel, Royal hubs, rubber pedals, roller lever brakes, 3-coil saddle, Michelin covers, guaranteed tubes, lined green and gold, new, every part guaranteed, £3 17s. 6d. Approval. Lady's, 3s. 6d. extra.—REYNOLDS, Williamthorpe-lane, Chesterfield. v 245

FEW surplus fine young Cotswold Queens, 3s. 6d. each.—BOWEN, Coronation-road, Cheltenham. v 248

PURE BERKSHIRE HONEY of the very finest quality, 60s. per cwt., in 28lb. tins.—ALBERT SANDYS, Drayton, Berks. v 252

SECTIONS, glazed, 9s. per dozen; unglazed, 8s. 6d. per dozen; extracted honey, 1lb. screw top bottles, 8s. 6d. per dozen; in tins, at 56s. per cwt., carriage paid.—MISS GORDON, Wethersfield-place, near Braintree, Essex. v 235

FOR SALE, or exchange for Bees, &c., six good black Airedale and Spaniel Puppies, will make good workers or guards, &c., price 12s. 6d. each.—Apply, W. A. ALLFREE, Talbot Inn, Mansfield. v 99

FOR HIRE, a "Herrod" demonstrating tent, 10s 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand, W.C.

SURPLUS 1912 imported Italian Queens, 4s.; English Blacks, 3s. 6d.; Carniolian Sladen Hybrids, 5s., per return post.—WHEATLEY, Spa Apiary, Hinckley.

BUSINESS ADVERTISEMENTS.

QUEEN BEES.—1912 Fertile Queens, guaranteed healthy, English Blacks, 4s.; Italian and Carniolan, first cross, disease resisting, 5s.—ADAMS, Heathhurst-road, Sanderstead.

HEALTHY SWARMS, 13s. 6d. and 15s. 6d. each, safe delivery.—BRADFORD, expert, Tibberton, Droitwich. v 100

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held in the Show Ground at the Royal Agricultural Society's Show at Doncaster on July 4th, 1912. Mr. A. G. Pugh presided, and there were also present Mr. J. Smallwood, Captain Sitwell, and Dr. T. S. Elliott; Association delegate, Mr. W. E. Richardson (Yorkshire), and the Secretary.

The minutes of previous meeting, held on June 20th, were read and confirmed.

Letters expressing regret at inability to attend were read from Messrs. T. W. Cowan, O. R. Frankenstein, T. Bevan, H. Jonas, W. F. Reid, A. Richards, J. Price, C. L. M. Eales, and Rev. G. E. H. Pratt.

The following new members were elected:—Mr. T. Hood, Mr. E. D. Lowes, Mr. W. O. Jones, Mr. C. W. Blackwell, and Mr. A. H. Saunders.

The report of the Finance Committee was presented by Mr. Smallwood, who stated that another record had been created in the bank balance. At the last meeting it was the highest in the history of the Association, but that had now been passed, the amount at the end of June being £257 1s. 8d. Payments amounting to £15 were recommended.

Applications for examinations were received for Leicestershire, North Norfolk and Devon Associations. These were granted and examiners appointed. Judges were also approved for North Norfolk Association's Show.

Reports on third-class examinations held for the Barnet and Cheviot Associations were presented, and it was resolved to grant certificates to D. Summerson, J. W. Nulls, G. J. Flashman, and P. W. S. Jefferies.

Mr. Pugh said how pleased they were to welcome the delegate of the Yorkshire Association, and he hoped that it was the first of many meetings Mr. Richardson would attend, as the Council were anxious to get into touch with all the Associations. London was a long distance for the Northern delegates to travel to meetings, and he hoped the new departure, which was to be a permanent one, of holding a Council meeting at the Royal Show each year, would be taken full advantage of by the delegates residing in the immediate vicinity of the centre in which the show was being held in that year. No doubt the small attendance was due to the fact that delegates had not quite realised that a Council meeting was being held out of London, and as this came to be more generally recognised the attendance would improve each year.

Mr. Richardson replied, saying how he had enjoyed the meeting and the opportunity of seeing the excellent way in which the affairs of the Association were managed. He felt quite at home, had been heartily welcomed, and he intended attending all the meetings he possibly could.

The next meeting of Council will be held on September 19th, at 23, Bedford Street, Strand, London.

THE "ROYAL" SHOW AT DONCASTER.

The seventy-third show of the Royal Agricultural Society of England was held at Doncaster from July 2nd to July 6th. It was expected that a record in attendance would be created, as had been done in the case of entries, but disappointment came in the form of the removal of all cattle during Monday night by order of the Board of Agriculture, on account of the outbreak of Foot-and-Mouth Disease. This, of course, made a great many people give up the idea of visiting the show. Also on the Tuesday rain poured in torrents during the whole of the day, with the result that there was not a single visitor in the Hives and Honey Section, and other departments shared a like fate.

The exhibits of honey, &c., also suffered on account of bad bee-weather, a number of entries being cancelled on account of this. Under these adverse circumstances the display was a very creditable one indeed, and it is satisfactory to state that during the rest of the show week the department was crowded with interested visitors.

Lectures and demonstrations were given each day to crowded audiences. We append a list of the awards made by the judges, Mr. W. F. Reid (London), Mr. G. Hayes (Notts), and Mr. J. H. Hadfield (Lincolnshire).

HIVES AND APPLIANCES.

Class 510.—*Collection of Hives and Appliances, including Suitable Outfit for a Beginner in Bee-keeping.*—1st, W. P. Meadows, Syston, Leicester; 2nd, J. Lee and Son, 4, Martineau Road, Highbury, London; 3rd, E. H. Taylor, Welwyn, Herts.

Class 511.—*Complete Frame-hive for General Use.*—1st, E. H. Taylor; 2nd, Jas. Lee and Son; 3rd, W. Dixon, Central Road, Kirkgate, Leeds, v.h.c., H. G. Tunstall.

Class 512.—*Complete Frame-hive for Cottager's Use, price not to exceed* 10*s.* 6*d.*—1st, E. H. Taylor; 2nd, Jas. Lee and Son; 3rd, W. P. Meadows.

Class 513.—*Honey-extractor.*—1st, E. H. Taylor; 2nd, W. P. Meadows.

Class 514.—*Observatory-hive with Bees and Queen.*—1st, Jas. Lee and Son; 2nd, T. W. Swabey, Lincoln; 3rd, W. Dixon.

Class 515.—*Any appliance connected with Bee-keeping.*—1st, Jas. Lee and Son; 2nd, W. P. Meadows.

HONEY.

Classes 516 to 518 confined to members of the Yorkshire Bee-keepers' Association.

Class 516.—*Four* 1-*lb. Sections.*—1st, P. M. Ralph, Settle, Yorks.

Class 517.—*Four* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, P. M. Ralph; 2nd, F. A. Bean, Snaith, Yorks.

Class 518.—*Collective Exhibit of Honey in Sections, Extracted Honey, and Beeswax.*—No award.

Entries in Classes 519 to 522 can only be made by residents in Cheshire, Cumberland, Derbyshire, Durham, Herefordshire, Lancashire, Leicestershire, Lincolnshire, Monmouthshire, Rutland, Shropshire, Staffordshire, Warwickshire, Westmorland, Worcestershire, Yorkshire, the Isle of Man, Ireland, Scotland, or Wales.

Class 519.—*Twelve* 1-*lb. Sections.*—1st, J. G. Nicholson, Langwathby, Cumberland; 2nd, J. Pearman, Penny Long Lane, Derby; 3rd, G. Marshall, Norwell, Newark.

Class 520.—*Twelve* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, J. Pearman; 2nd, W. Barlow; 3rd, R. Morgan; v.h.c., A. S. Dell, Leigh, Lancs; h.c., E. Humphrey.

Class 521.—*Twelve* 1-*lb. Jars of Extracted Medium- or Dark-coloured Honey.*—1st, T. Manfield; 2nd, F. Harris, Sibsey, Boston; 3rd, T. A. Dennison; v.h.c., G. Marshall; h.c., W. B. Allister, Throckerholt, Wisbech.

Class 522.—*Twelve* 1-*lb. Jars of Granulated Honey.*—1st, J. Woods, Nettleworth Manor, Mansfield, Notts; 2nd, J. Pearman; 3rd, E. Church.

Entries in Classes 523 to 526 can only be made by residents in Bedfordshire, Berkshire, Bucks, Cambridgeshire, Cornwall, Devon, Dorset, Essex, Gloucestershire, Hampshire, Herts, Hunts, Isle of Wight, Kent, Middlesex, Norfolk, Northamptonshire, Oxfordshire, Somerset, Suffolk, Surrey, Sussex, or Wiltshire.

Class 523.—*Twelve* 1-*lb. Sections.*—1st, A. Hiscock; 2nd, R. Brown and Sons, Somersham, Hunts; 3rd, E. E. Brown, Holmcroft Apiary, Orchard Lane, Melbourne, Cambs; v.h.c., G. Bryden.

Class 524.—*Twelve* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, R. Allen, Tusmore, Bicester; 2nd, R. Brown and Son; 3rd, E. E. Brown; v.h.c., G. W. Kirby, Priory Road, Knowle, Bristol.

Class 525.—*Twelve* 1-*lb. Jars of Extracted Medium- or Dark-coloured Honey.*—1st, C. E. Billson, Cranford, Kettering; 2nd, R. Brown and Son; 3rd, G. W. Kirby.

Class 526.—*Twelve* 1-*lb. Jars of Granulated Honey.*—1st, R. Brown and Son; 2nd, E. E. Brown; 3rd, R. Allen; v.h.c., Rev. F. E. Crate.

MISCELLANEOUS OPEN CLASSES.

Class 527.—*Three Shallow-frames of Comb Honey for Extracting.*—1st, G. Bryden; 2nd, R. Brown and Son.

Class 528.—*Six* 1-*lb. Jars of Heather Honey.*—1st, T. Hood, Pickering, Yorks; 2nd, M. J. Lamboll, Chiddingford, Surrey; 3rd, E. W. Spink, Green Tree, Easingwold, Yorks; v.h.c., J. Berry, Llanrwst, North Wales.

Class 529.—*Six Jars of Heather-mixture Extracted Honey.*—1st, G. H. and T. S. Elliott; 2nd, W. Dixon; 3rd, J. Pearman; v.h.c., J. Berry.

Class 530.—*Honey Trophy.*—1st, W. Dixon; 2nd, R. Brown and Son; 3rd, J. Pearman; v.h.c., T. W. Swabey.

Class 531.—*Beeswax (not less than* 2-*lb.).*—1st, J. Pearman; 2nd, R. Brown and Son; 3rd, A. Hiscock; v.h.c., R. H. Baynes.

Class 532.—*Beeswax (not less than* 3-*lb. in Shape, Quality and Package suitable for the Retail Trade).*—1st, J. Pearman.

Class 533.—*Honey Vinegar* (1 *quart*).—1st, G. W. Kirby; 2nd, R. Brown and Son.

Class 534.—*Mead* (1 *quart*).—No award.

Class 535.—*Exhibit of a Practical or Interesting Nature Connected with Bee-culture.*—1st, W. Dixon.

Class 536.—*Exhibit of a Scientific Nature.*—1st, Miss A. Betts, Hill House, Camberley, Surrey.

WARNING TO OUR READERS IN IRELAND.

The dreaded "Isle of Wight" disease has broken out in Ireland. Bees have been sent to Dr. Malden, and his diagnosis agrees with ours, that it is "Isle of Wight" disease. Bee-keepers should keep a careful watch upon their bees, and on signs of the disease appearing destroy the stock to prevent it spreading. All bee-keepers should obtain the leaflet on this disease printed by the Board of Agriculture and Fisheries, which can be obtained free on application to the Department of Agriculture and Technical Instruction for Ireland, Upper Merrion Street, Dublin.

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

Distribution of Foraging Bees on Plants.—M. A. Desgrès, writing in the *Bulletin de la Société d'Apiculture de la Somme*, says it is curious to notice how bees distribute themselves on different plants for the purpose of collecting pollen and nectar. It seems that every day, after the early morning exploration by the

workers which first leave the hive, the bees are well informed as to the resources of the locality, the relative honey value and the distance of all the nectar-yielding plants within a certain radius of their hives. If the different directions in which the bees fly when they leave their hives are noted, and if the bee-keeper follows them up to their foraging ground, it will be observed that the bees distribute themselves on the flowers in proportion to the number of plants of the same species there may be, and their richness in nectar. Moreover, they are able to estimate daily the value of the best available sweet liquid. For example, if after the blossoming of the willows, when there are still no flowers in the fields, the bees have only those in the woods and gardens to gather from, they will abandon these entirely a few days later for the purpose of visiting cabbage or rape blossoms. In this way, by a division of labour they regulate their distribution on the plants so as to collect the best nectar in the shortest possible time.

German Bee-keeping Statistics. — We read in the *Bienenpflege* that there are at the present time 2,605,350 hives of bees in Germany. Estimating the annual production at 5 kilos per hive per annum, the editor says it would represent a yearly harvest of 13,026,750 kilos of honey, valued at 16,000,000 marks, or £800,000.

Troubles in Hiving Second Swarms.— Prime swarms are easy to hive, for the queen mother which accompanies the swarm being heavy, owing to the weight of her abdomen and her age, hastens to find a home, and willingly accepts the one presented to her. It is her want of agility that is the determining cause in her selecting a spot near the ground, and a short distance from her hive. M. Barthelemy says in *Revue Française d'Apiculture* that second swarms, owing to their having young queens which are always lively, are ready to fly on the slightest provocation. As soon as such a swarm settles, no time should be lost in securing it. For this purpose a light oblong rectangular box is recommended, twice as high as it is broad, with a hinged bottom, the top being nailed down. Two openings are cut in the ends, which are covered with perforated zinc for the purpose of giving ventilation when needed. These holes are kept closed with pieces of paper pasted on the edges, so that they may be easily torn off when ventilation is required. The case will serve to capture and hold the swarm until it is hived permanently. For securing the swarm the case is held over it, so that the edge just touches the cluster, and the bees are gently driven into it with smoke. First a few puffs on the upper part of the cluster will start the bees in motion, and they seek shelter in the box above them. Next, some stronger puffs of smoke at the bottom of the cluster start the bees, who scramble up over each other in their endeavour to join their companions above. It is not necessary to hasten the movement, as it accelerates naturally when the bees discover so convenient a home. When nearly all the bees have been got into the box it is closed to prevent them from getting out, and the few flying bees of the swarm will cluster on the side of the box, which is placed on the ground close to where the bees settled. It must be left there until the bees have to be introduced into their hive in the evening. M. Barthelemy says that a second swarm should not be permanently hived in broad daylight, and it is more prudent to do so in the evening about one hour before dark.

It sometimes happens that just as the bee-keeper is ready to take the swarm it is inclined to fly away. At such times prompt action is needed. In view of such a contingency it is convenient to have a brush or some goose feathers, and as soon as it is noticed that bees are leaving the group the box is brought forward and placed under the cluster, and the greater part of the bees brushed down into it. If an appreciable number still remain behind, give the box a jar so that the bees running up the sides in their endeavours to escape may fall to the bottom, and quickly brush in the remainder of the cluster, and close the box. If the queen is inside, the bees which were decamping will return to search for her, and will settle on the sides of the box. Even if the young queen had already flown, owing to the noise made by the bees in the box at her absence, there would be every probability of her returning. Towards night the swarm can be introduced into the hive, as the bees at that time are less inclined to fly away.

Honey as a Remedy for Influenza.— Yarrow and honey are a certain remedy for influenza. The *Hessische Biene* says that if at the commencement of the malady a cup of yarrow tea sweetened with a good spoonful of honey is taken morning and evening, the invalid will be cured in a very short time. One cup of this drink is sufficient to arrest a cold in the head. Taken as an ordinary drink daily, it is good for delicate children, sickly and chlorotic persons, who are all greatly benefited by it.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

INCREASE.

(*Continued from page* 253).

Increase by means of Nuclei.—This is a plan which can be adopted when the colonies are very strong, some little time

before the honey harvest, as is the case in some seasons. It has the advantage of enabling the bee-keeper to check the desire of the bees to swarm. Commence to stimulate early, so that about the beginning of May the hive is full of bees. Choose a nice warm day when the bees are flying freely, and proceed as follows, carrying out the work as near midday as possible, when the flying bees are out and mainly young ones at home. Remove one comb containing brood and eggs with the adhering bees, taking care that the queen is not upon it. To avoid the possibility of getting the queen into the nucleus during the operation of making it, a good plan is to catch her and place her in a matchbox, putting it in the pocket for warmth, then when all is completed and the hive again wrapped down, run her back into the parent stock.

Take also two combs of food either from the stock operated upon, or from others in the garden or from a store kept over from the previous year: if from another stock, the bees must be shaken or brushed back. Place the food combs on either side of the brood comb and close up with division boards. For the success of the nucleus it is necessary to have about two pints of young bees. These can be obtained by shaking the bees from two or three combs belonging to the parent hive. The nucleus must be fed, and care must be taken to wrap it up warmly. To facilitate the rearing of queens, and also to obtain the best, *i.e.*, those reared from eggs, break down the walls of several cells containing eggs. In place of the combs removed, new frames fitted with full sheets of foundation are put in at the side of the brood nest, not in the centre.

A queen will be reared and eventually become fertilized, and commence to lay, when we have a nucleus, *i.e.*, a colony in miniature, containing all the constituents of the hive: queens, workers and drones. By careful nursing it can be built into a strong stock for wintering, but will not give surplus. If it is desired to obtain surplus, then what is termed a "nucleus swarm" can be made. The term is vague and difficult for the novice to understand. It really means that having a nucleus and a strong stock in the apiary both are to be equalized in bees. To do this the climatic conditions should be as for making a nucleus. Cage the queen in the nucleus, fill up the hive with seven frames fitted with foundation to make ten, and wrap down warmly. Move the strong stock to the stand of the nucleus, and the nucleus to the stand of the strong stock. The flying bees go to the old location, and so make the nucleus strong in bees, while the stock will have sufficient young bees and brood to populate the hive and obtain surplus.

The question may be asked: Why cage the queen in the nucleus and not in the strong stock? The reason is that there will be such an influx of old bees to the nucleus that they would ball the queen; while to the stand of the nucleus so few flying bees will go that there is no risk of harm to the queen. The advantage of this method of increase is that we have a laying queen in both lots immediately the change is made.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BLURTS FROM A SCRATCHY PEN.

[8489] When kindred spirits meet, and the conversation turns on their favourite hobby, then one recollection speedily follows another, and so Mr. Abbott's letter of June 13th, with its interesting reminiscences, set me a-thinking of some of my own experiences. Long, long ago, I became inoculated against any serious inconvenience from the stinging of bees, and now they must be a very cross-grained lot indeed to compel me to "take the veil." But I really do think that we who wander among the hives have much to be thankful for in that we get "jolly well" stung sometimes. Personally, I have often tried to count my daily score, but it is difficult to play the game and mark at the same time, and so, after about twenty or thirty stings I give it up. And why should I find something to rejoice over? Because I believe that in formic acid we have one of the best antidotes to the poison of the other acids which desolate the *corpus humanum*. After all, what *is* the pain of being stung? Absolutely trivial. A sharp prick as of a pin, (the surgeon's lancet is infinitely worse) for the moment it irritates, a genial and not unpleasant warmth of the part affected follows, and the cure is already in action. The aches and pains of rheumatism we suffer with a martyr's fortitude, but I have seen a crowd run helter-skelter at the buzz of a single bee.

We think we know a great deal about bees, are fairly well acquainted with their anatomy, have a very good general idea how to keep them in health, and know how to make them increase and multiply. Of course, too, we know how to take their

surplus; that is our profit in the deal. But are we acquainted with their social life? Is there such a thing as "society" among them in the sense that the aristocratic residents in the "swell" W.B.C. hive located in the well laid-out garden refuse to notice the "bourgeois" citizens who dwell in the humble straw skep standing in the allotments? Of course, they are not on their visiting list. And does the neighbourhood of polite or intellectual humanity have any influence on them? Does it make them less rude and more courteous? Is there something in the surrounding air which renders them more docile, more suave? I am lead to this train of thought because in my dual duties as visitor to the apiaries of Middlesex and Oxfordshire I cannot help but notice the difference created by locality. It is generally conceded that excellency gravitates to the metropolis as to a natural centre, let it be art, science, or manufacture, and consequently London and perhaps Paris are the most refined cities of the world. Now, is it as a consequence to the proximity of this polish, this refinement, that in Middlesex I have but seldom to wear a bee veil? 'Tis true I have it in my pocket, but there it remains. And again, when I approach Oxford, and its grey old colleges, the intellectual atmosphere which pervades its surroundings seems to exercise a kindred charm. Yet, let me but get out of the reach of this magnetism, and the bees are as fierce as any 'twixt Thames and Tyne. Can any of our northern friends tell us their experiences, "D. M. M.," for example? "Within a mile of Edinboro toun" one would think that the bees would be *unco guid*.

It is generally supposed that the capability of making themselves unpleasant remains with the workers. Not always! I had a very bad quarter-of-an-hour recently with the drones, and my pride was humbled. The occasion arose as thus: I was endeavouring to impart some of the information I have gathered together concerning bees to a novice, and to give confidence I did not use a veil. We opened a hive, and straightway there belched forth a myriad of drones. They buzzed, they hummed, they droned, they pinged like rifle bullets against my face; they crept 'neath my wristbands, 'twixt collar and neck, over my hands, my eyebrows, and in my hair. Conversation was impossible, and in desperation I was compelled to rush to the shelter of a hospitable bush whilst I donned my visor of net. If I had but the genius of Edgar Allan Poe! How he would have revelled in describing the horror of being pestered to madness by a wild army of drones. It is *too* blood-curdling; I cannot attempt it. I will leave it to some of those brilliant authors who write "penny dreadfuls."

Why will swarms so persistently choose Sunday morning for their sortie, just at the hour when good people are on their way to church? One reverend gentleman to whom I posed this theory insisted that it was quite reasonable to believe that they were attracted by the metallic music of the church bells. Now, if this is true, that bees have an ear (antennæ would be more correct) for music, and the fact that they are so interested by the frying-pan and kettle symphony seems additional proof, what possibilities does it not open to us? We all know that.

"Music has charms to soothe the savage beast," and the savage insect also. The most vicious of stocks should become as gentle as lambs if only during manipulation some accompanying musician would play dulcet airs on a penny whistle. We might even be able to communicate interesting events occurring in the family by the same medium; the tying of the matrimonial knot could be announced by a "Wedding March," and when the good old bee-keeper himself died, why then we could "tell the bees" too. The "Dead March" in "Saul" would tell the sad tidings. Could we establish some cross-communication with them, perhaps by the correct registration of their varied hums of anger and of pleasure, we might be able to talk to them? Who knows? Or, as one of my North-country friends replied when I suggested the possibility, "Happen."—J. Smallwood.

HIVES AS INCUBATORS.

[8490] It may be of interest to readers of the "B.B.J." if I give my experience of hatching chickens in a beehive. On June 4th my wife set a hen on eleven hen's eggs and two duck's eggs, and all went well until the morning of the 20th, when on going to feed the hen my wife found she had left the nest, and the eggs were quite cold. Having another broody hen she tried to get her to sit on the same eggs, but she would not take to them. I therefore decided to try a beehive as an impromptu incubator, and quickly knocked up a box about 9in. square and 8in. deep, tacking a piece of canvas tightly across for the bottom. I laid the eggs in this, with a wisp of hay round the sides, placed it on top of the first quilt over the brood frames, covering all snugly with two warm quilts. I examined the eggs each day and turned them, and on the morning of the 27th we were delighted to find six chicks hatched out and two shells chipped.

We removed the chicks, and left a light quilt over the box, thinking it would give

them more air as the others hatched out. By the evening, the two that were chipped hatched out safely, but as the remaining eggs had got very cool, I covered up warmly again. Subsequent examination, however, proved that the remaining chicks and the ducklings had died in the shell, presumably through getting too cool when nearly hatched. As it was, the chicks took twenty-three days to hatch instead of twenty-one, which may have been caused through getting chilled on the sixteenth day, or perhaps the heat being slightly less than in the case of a sitting hen.—T. H. W., Walthamstow.

AN ENGLISH BEE-KEEPER IN NEW ZEALAND.

[8491] In response to your letter I received just before sailing for New Zealand last October, in which you mentioned you would be glad to hear from me, I herewith send you a brief account of my experiences, which may be of interest to fellow members of the craft, especially those who intend looking out for pastures new in which to carry on the pleasant hobby or business, whichever they make it, of bee-keeping. I arrived in Auckland on December 2nd, 1911, just before midsummer, and in my rambles around the city and suburbs I found a fruit-grower who had a number of boxes of bees for disposal, which I eventually purchased. It will be of interest to bee-keepers at home who are at present criticising the so-called New Zealand drastic Bee Pest Act to know that there are still bee-keepers who have their bees in boxes here at present, and not on movable combs; in fact, in this warm climate the queens lay so well that the stocks soon swarm, and the bee-keeper here has to use boxes, if only temporarily.

I drove all the bees I bought from the boxes, and joined up some of the lots, and have now a small apiary of eleven stocks, all in sound hives, stocks headed by good queens, some of which I have raised and re-queened. The summer here has been very wet, strong winds blowing for days together, so the bees have had to be fed, the eleven stocks consuming 2cwt. of sugar. Hives are dear to buy, appliances fairly cheap, sugar £1 a cwt. Section honey is sold retail at 4d., 5d., and 6d., wholesale prices ranging from 2s. 9d. to 4s. the dozen, so it requires fine weather and good colonies to earn an average of £1. I am sorry to see the "Isle of Wight" disease is still spreading in England. I get the "B.B.J." fortnightly, and eagerly read same. Hoping to write you again in the near future, and wishing all bee-keepers at home a good season.—W. Ringer, Auckland.

HEATHER HONEY AS WINTER FOOD.

[8492] With regard to this controversy, I may say that I wintered bees on heather honey for several years when living in Yorkshire, and never noticed any ill effects from its use, though the only serious case of dysentery I ever had occurred during that time.

Your correspondent, "D. M. M." (page 262), however, makes a most unfortunate choice when he fixes on your old-time contributor, "A Lanarkshire Bee-keeper," as a champion of his cause. If you will turn to page 225, April 1st, 1877, you will find that "being dead he yet speaketh," though *not* in the way that "D. M. M." evidently expects, but the exact opposite. He says: "Every one has survived the winter; *the only ones showing any signs of dysentery are those that were at the heather.* (Italics mine). This is my experience for many years now, that bees keep more healthy during winter on dale than on heather honey or sugar."—Saml. P. Soal.

BEE DISEASE LEGISLATION.

[8493] While giving the above my hearty support, I had no wish to enter into correspondence on the subject, until now, but I think Mr. Woodley and his friends have a very weak case compared with mine. About a month ago a gentleman of this town bought a stock from one of our large dealers; being a novice, he could not liberate the bees and had to ask advice of another party, who thought there was something wrong with them, and he sent to an expert for advice. His report pointed very clearly to "Isle of Wight" disease. This expert and myself waited upon the owner, who said if it was the case the stock should be destroyed at once. I arranged to go and take some bees from the hive to send to Dr. Grahame Smith, of the Board of Agriculture, but when I arrived it had already been done, so I contented myself by watching the bees. Very few were working, but as they came from the hive they dragged their hind-quarters for about two or three inches, then stopped, and then dragged themselves a little further before taking flight. These symptoms, from previous experience, quite satisfied me as to what was wrong. I reported same and asked for them to be destroyed. This was June 6th. Since then the Board of Agriculture's report came to hand as a case of "Isle of Wight" disease. The bees and all the loose parts have now been destroyed, and the hive disinfected; the dealer has promised to make it good. Yes, but how? I suppose by sending another stock from same apiary. These bees were dumped down within a mile of my apiary. Now, I should like to know, shall the

many have this disease planted down in their midst for the sake of a little extra gain for the few? I say "No." Let us have a man of experience and commonsense as inspector, who would not require to pull a stock about to know if all is right. Mr. Woodley knows this, and I am going to take his advice and write to our two members and the President of the Board of Agriculture, asking them to give this Bill their hearty support. Had this gentleman, mentioned above, been able to liberate the bees himself, no one would have known that the disease was there until great damage had been done.—J. PEARMAN, Expert, Penny Long Lane, Derby.

QUEEN VAGARIES.

[8194] I have another queen vagary to relate, much like the one I described before in "B.B.J." On May 9th I made a nucleus of four frames with their bees, leaving the queen behind. On May 15th I was surprised to find in the moved part two queen-cells just hatched out. I was looking for sealed cells because I wanted them. On May 27th, as the queen did not seem to be getting along, I gave the nucleus a half-grown queen-cell, which the bees promptly destroyed. Inspected for eggs on June 1st, June 4th, June 10th, June 18th, and June 27th. Then, for the first time I found grubs not more than three days old. I have never given eggs or any frames to this lot since it was divided, and I make out that queens were hatched on May 15th, and did not lay till June 21st, an interval of thirty-seven days.—G. E. DESMOND, Camberwell.

ERRATUM.—PRINTER'S ERROR.

Page 264, column 1, lines 15-17, "In neither disease, say Dr. Phillips and Dr. White, are adult bees infected, so far as is known," should read: "In neither disease, say Dr. Phillips and Dr. White, are adult bees affected, so far as is known."—F. W. L. S.

Queries and Replies.

[8174] *Bees Refusing to Work in Super.*—I have a strong stock of bees on nine frames. Six weeks ago I put on a super of ten shallow frames fitted with comb foundation, also excluder zinc. The bees came up into the super and practically covered six frames, but they would not draw out any comb. The super remained on a whole month, when I removed it, and found the frames the same as when I put them on, except that the foundation was sealed in places to the sides of the frames. I then put on a rack of sections, hoping that they will take to these better than the shallow frames. Being a constant reader of your "B.B.J." I should be very grateful for an explanation. I should also be glad to know if I did the right thing by removing the shallow frames and putting the rack of sections on.—W. J. H., Newbury.

REPLY.—The bees refused to work the supers for one of two reasons. Either the stock was not strong enough or the weather was not warm enough for the secretion of nectar in the flowers. You did wrong in removing the shallow frames, as bees take more readily to these than to sections.

[8175] *Bees Casting Out Young Brood.*—Will you kindly give me your advice through the "B.B.J." on the following: I have been to examine some bees for a friend and found something very wrong with them. They are turning out a lot of immature bees, and I also found whole frames of brood that had not been properly sealed, in which all the larvæ seemed dead, and the bees are throwing them outside; they were quite white. Do you think it is a bad case of chilled brood, or is it one of the dread signs of "Isle of Wight" disease? I have never seen anything like it before. There were plenty of bees in the hive, and the queen was laying; also they had a fair quantity of sealed honey. The weather here is very wet and cold. Kindly advise we what you think it is, and how to treat them.—G. B. J., Wolverhampton.

REPLY.—When bees are affected with "Isle of Wight" disease, no difference in the brood is apparent. It may be any of the three following causes: chilled brood, an overdose of naphthaline, or damage by wax-moth.

[8176] *Loss of Queen.—Effects of Bee Stings.*—(1) Seven days ago I examined one of my hives, and every comb was full of eggs and larvæ, and as I had a stock in weak condition without a queen, I took out a comb with eggs and brood, and inserted it after close examination and shaking off some of the bees, in the weak stock. To-day there is brood sealed over and a queen-cell. But on examining the strong stock there is very little sealed brood and no eggs or larvæ, although there were both seven days ago in plenty. Outwardly, one could see there was something amiss, as the entrance was crowded with bees walking round in an aimless manner, a good number, of course, flying. We have had heavy thunder showers, and yesterday bees were yellow with pollen-dust and the combs are yellow with the same. There must have been a wholesale destruction of eggs and larvæ. Can you suggest a reason? (2) I have kept bees for some fifteen years, for most of the time away from any other bee-keeper. I have had plenty of stings, especially in my first

years, when I had no mentor, with the usual pain and swelling. Last year, however, I was stung, with alarming results. I tingled all over and my face puffed up, and in working my facial muscles I felt them to be stiff. I think my heart-beat was quicker, and my fact was very red. I was in hopes this was only due to temporary derangement, but to-day I was stung on the wrist, and again my face was red and puffed and both hands tingled, and people remarked on my appearance. I rarely get much honey, and have kept bees as a student of Nature, and do not like to give it up. Can you or any of your readers help me with suggestions or explanations?—J. H. P., Rishworth.

Reply.—Evidently you inadvertently took the queen over to the weak stock with the combs. (2) Occasionally stings cause a kind of eczema. If this continues buy a pair of rubber gloves to wear when manipulating.

[8477] *Bees and Vetches.*—I was walking by a field of tares (vetches) on June 30th, when I observed a lot of hive bees working round the stem and base of flowers, but they did not go to the mouth of same, and yet humble bees were working the flowers from the mouth. Can you tell me what they were gathering?—O. D., Beckenham.

Reply.—Hive bees can work vetches. No doubt they were after moisture, which lodges in the leaves of these plants.

[8478] *Beginner's Queries.*—Will you kindly give me your advice on the following:—(1) A month ago I supered a stock and then saw that it had three queen-cells, with an egg in one and a good-sized larva in another, but up to now the bees have not swarmed. Do you think that they will do so now? If not is it too late to make an artificial swarm, and how shall I proceed now that the stock is supered? (2) I found outside the hive on 28th ult. a white grub, about ⅜in. long, alive. Do you think that this was a queen which the bees were rearing, but threw it out because of the rainy weather we are having? This being my first season, I require a little help, which I usually find in "B.B.J." and "Guide Book."—W. P. D., Dudley.

Reply.—(1) The bees are not likely to swarm now, as we are having bad weather. It is not too late to make an artificial swarm if you feed both lots when accomplished. To do this remove the supers and proceed in the usual way, putting back the supers on the swarm when made. (2) It may have been the grub from a queen-cell, or the larva of wax-moth.

[8479] *Transferring from Box- to Frame-hive.*—This spring an old box-hive containing fixed combs belonging to a cottager was placed on top of a modern hive containing ten frames. Yesterday I lifted off the former, which weighs anything between 70lb. and 90lb., and found that the combs in the lower hive were full of honey and brood, and I saw the queen. In the upper box-hive there was a certain amount of brood, (impossible to say how much owing to the combs being fixed and at all angles), but there were a great many bees. The old hive, in which the bees had been for fifteen years, has a hole in the top of it, over which supers had been placed originally. The only supers available are lightly-made section racks. What am I to do under these conditions? I have put a queen-excluder on top of the lower hive, replaced the box-hive and placed a rack of sections on top of this. I was afraid to put sections below owing to the great weight of the box-hive. Would it have been a better plan to drive out all the bees from the old box, cutting out the combs and sacrificing brood, such as it was, little or much, and have placed two section racks on top of the brood-chamber and shaken down the driven bees in front of the hive?—A. R., Wookey.

Reply.—Wait for three weeks, when all the brood will have hatched out. Then take off the box-hive and drive out all the bees; shake them down at the front as you would a swarm. You can then break up the combs in the old box and obtain the honey without sacrificing the brood. Or you could clear the box by means of a Porter Bee-Escape.

[8480] *Preventing Swarming.* — The last week of June, though showery and unsettled, was quite warm, and the bees in colony mentioned in my Query 8362 worked steadily in common with other colonies. I did not, therefore, feed them again, but left on the section-rack, which was crowded with bees which appeared to be at work upon the foundation, presumably drawing out the comb. On June 29th a large swarm issued (which I have hived in a new hive, where they cover eight frames), and on examining the parent stock I find a most surprising number of bees still present (they cover all ten frames fairly thickly), brood in all stages, a good quantity of pollen, and little honey, a large number of drones and six queen-cells. (1) Ought I to have foreseen and prevented the swarming of the parent-stock, and if so, how? (2) Was it precipitated by generous feeding? (3) On examining the rack of sections I find none of the foundation has been drawn out. Is not this strange, considering it was full of bees for ten to fourteen days before they swarmed? (4) Is it advisable to cut out all queen-cells except one from parent-stock, and feed the bees (and, if so, how much) for the next ten days? (5) Will they probably form after-swarms if left as they are? (6) Is the fact that

there is little honey in the brood-chamber against putting on supers in a stock, *i.e.*, should one invariably wait until there is a good store of honey in the brood-chamber before supering? — BEGINNER, Strathpeffer.

REPLY.—(1) This cannot always be done. You might have retarded it by giving bottom ventilation. (2) No. (3) It is curious that they had done no work. (4) Yes, about two holes of the bottle-feeder. (5) It is probable. (6) No. If the combs in the brood-chamber are crowded with brood, then a super should be put on so that the honey will be stored in the supers.

Bee Shows to Come.

July 17 and 18, at Newcastle-under-Lyme.—Staffs. Bee-Keepers' Association Annual Exhibition in connection with the Staffs. Agricultural Society. Open classes. Schedules from Joseph Tinsley, 22, Granville Terrace, Stone, Staffs.

July 17 and 18, 1912, at Cardiff.—Cardiff and County Horticultural Society's Show. Separate tent for Bee and Honey section, under the management of the Glamorgan B.K.A. **Entries closed.**

July 18th, at St. Albans.—St. Albans and District Bee-Keepers' Association hold their Annual Show, in connection with the St. Albans Horticultural Society, in Clarence Park. **Entries closed.**

July 18 and 19, at Skegness.—Lincolnshire Agricultural Society's Show. Bee and Honey Section, under the management of the Lincs. Bee-Keepers' Association. Over £30 in prizes. Many open classes. **Entries closed.**

July 24th, at Over Wallop.—The Annual Honey Show of the Wallop Horticultural Society will be held in the grounds of Southern Farm. Open classes; no entry fee. Schedules from Mr. Pryce Roberts, School House, Nether Wallop, Stockbridge.

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton. **Entries close July 27th.**

August 1st to 5th, at Preston.—Annual Show of the Royal Lancashire Agricultural Society. Honey and Bee Appliance Section. **Entries closed.**

August 5th, at Melton Constable.—The Annual Show of Bee Produce of the North Norfolk B.K.A. will be held in connection with the Melton Constable Horticultural Society. Schedules from Hon. Sec., D. Wardleworth, Sheringham, Norfolk. **Entries close July 29th.**

August 5th (Bank Holiday), at Cambridge. Honey Show in connection with the Cambridge Town and County Mammoth Show Society. All open classes. Silver and bronze medals of the B.B.K.A. to be competed for; also another silver medal and three special hives. This show also includes dogs, poultry, pigeons, rabbits, cage birds, flowers, fruit and vegetables; also grand programme of sports and motor racing, &c. Balloon ascent and double parachute descent by Captain and Miss Spencer. Special engagement of the Black Dyke Band. Mr. W. Herrod, F.E.S., expert to the British B.K.A., will lecture and demonstrate in the bee and honey department during the day. Schedules for bees, honey, and horticulture from Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge-street, Cambridge. **Entries close Thursday, August 1st.**

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester. **Entries close August 3rd.**

August 14th, at Wye, Kent.—11th Annual Exhibition in connection with the Wye Grand Horticultural Show. Classes to suit all Bee-keepers, great and small; two 5gs., one 6gs., one 2gs. cups in different classes. Various classes open to Kent, Surrey, Sussex, and United Kingdom. Splendid prizes and low entrance fees. Send for schedules to Mr. Alfred Lepper, Secretary, Kent Honey Show, Wye, Ashford, Kent. Note.—Schedules will be sent to competitors of 1911 without application. **Entries close August 5th.**

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 22nd, at Abington Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

Notices to Correspondents.

T. B. (Ruthin).—*Using Apicure.*—You should keep on using the Apicure until the stock is cured. The time for this varies from one to three months. There is no need to destroy the fittings of the hive.

GLASSFORD (Lanarks).—*Queen Ceasing to Lay.*—The queen is a fertile one, but has been badly injured in the abdomen, probably during a manipulation of the hive. This accounts for the trouble.

H. W. B. (Norfolk).—*Reports of the Honey Season.*—(1) We agree that they would be interesting, and we shall be pleased to insert them if correspondents will send them in. (2) Your good management probably accounts for the fewer swarms now.

NOVICE (Patcham).—*Artificial Increase.*—(1) If you continue to read "Helpful Hints for Novices" you will find this method explained. (2) The bees are probably short of food, and that is why they are casting out immature brood.

C. E. E. (Manor Park).—*Bees Refusing to Work in Sections.*—The bees have not worked in the super on account of the bad weather. Put the excluder back as soon as they take to the section rack, which they will most probably do as soon as the weather becomes warm.

Suspected Disease.

E. S. (Chislehurst).—From your description we should say the bees have "Isle of Wight" disease. Send some bees to Dr. Malden, Medical Schools, Cambridge, for confirmation.

A number of Queries, &c., are held over for lack of space.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

ONE TAYLOR'S W.B.C. HIVE, and one W.B.C. pattern, both complete, 21/- the two; quantity accessories, 5s.—W. J. WILLIAMS, The Bungalow, Addlestone.

GOOD SWARM for disposal, 8s.—G. ANTHONY, Jun., Stamford Bridge, Yorks. v 299

SURPLUS splendid Blacks, Virgins, 1s. 6d.; Fertiles, in few days, 4s.; orders rotation.—PAUL, Salisbury-road, Bexley. v 298

SIX-FRAMED ROOT EXTRACTOR, reversing gear, almost new; what offers? also surplus Excluders, new, 3d. each.—LEA, Vartrees, Dorchester. v 210

OFFERED on payment of carriage, unbound Journals various years between 1887 and 1911.—REV. A. HEADLEY, Alresford, Hants. v 210

NUCLEI.—Four 4-frame, with 1912 fertile Queens, strong enough to build into good stocks unaided before winter, 12s. 6d. each, 45s. the lot.—GEO. MACKIE, Mythe, Tewkesbury. v 212

FOR SALE, Section Racks, standard and shallow Frames, Wax Extractor, straw Skeps, Queen Excluders, &c., going cheaply.—HOLMAN, East Hoathley, Sussex. v 217

WANTED, Extractor, cheap, to take standard, shallow, and sections.—C. HATFIELD, Little Haylands, Chigwell. v 214

TAYLOR'S No. 17 Extractor, £1; Ripener and Strainer, 5s.; Uncapping Tray, 1s. 6d.; second-hand Hives, from 5s.; shallow Combs, 3d.; Racks, with 8, 3s.; stamp, list.—RACKHAM, Gilwern, Abergavenny. v 218

RUN HONEY WANTED, cwt. or more.—Sample and price to WELTON, chemist, Wallasey. v 220

STRONG 3-frame Nucleus, 8s., guaranteed 1912 Queens.—ROSS, Glorat, Milton of Campsie, Stirlingshire. v 219

FOR SALE, a few choice 1911 Queens, 1s. 6d. each.—CROWE, Central-avenue, Wigston, Leicester. v 222

TWELVE strong, healthy Stocks, in 10-frame hives, supers on, 25s. each stock.—W. PRINGLE, 2, Commercial-square, Winlaton, Blaydon-on-Tyne. v 225

TWO HONEY EXTRACTORS, 15s. and 7s. 6d.; Ripener, 200lb. to 300lb, 5s.; 12 Excluders, 4s.; Uncapping Knife, 1s.; Wax Smelter, 4s. 6d.; volumes "B.B.J.," valuable, bound.—BASSETT, Curridge, Newbury. v 223

FOR SALE, about twenty Colonies, on 8, 10, or 12 frames; or Swarms (artificial); Colonies at 3s. 6d. per frame; Swarms at 15s. per swarm; inspection before buying invited; cash with order.—CHAS. J. ASHWORTH, Heytesbury, Wilts. v 226

IRISH RED SETTER PUPPIES, 4 months, good working strain, by pedigree sire, 10s. 6d. and 12s. 6d.; exchange entertained.—FARNELL, Eldwick, Bingley. v 227

PROLIFIC CARNIOLANS, strong 3-frame Nucleus, 1912 Queens, 12s. 6d., boxes free.—FROST, Hartshill, Stoke-on-Trent. v 228

FOUR 5-frame Nuclei Hybrids, May, 1912, Queens, packed with Bees and Brood, wired frames, 16s. 6d., boxes returnable.—F. BROWN, Sproughton Manor Gardens, near Ipswich. v 231

SECTIONS and EXTRACTED WANTED, any quantity.—F. W. WEITZER, 21, Lonsdale-road, West Kilburn, London, N.W. v 215

PRIME SWARM, crowding 7 frames, natural stores, 1911 Queen, 16s., box returnable.—WATERSON, Hunter-street, Burton, Staffs. v 263

SELL, Taylor's 32s. 6d. chain geared Extractor, new last year, take 25s. Approval; Deposit.—N., "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 221

A FEW choice fertile 1912 Queens, 3s. 6d. each.—SNELGROVE, Albert Quadrant, Weston-super-Mare. v 284

FOUR SWARMS of Simmins's White Star Italian world-famed strain, wonderful workers, prolific Queens, bargain of the season, only 15s. each.—G. TUDOR-WILLIAMS, B.B.K.A. expert, Aberdare, Wales. v 280

SPLENDID new English Clover Honey, 60s. per cwt.; sample, 3d.—A. COE, Apiary Hall, Ridgewell, Halstead, Essex. v 294

BEE VEILS, black or white, 8d. each, post free; also net for demonstrating tent.—HARRISON, Rockville, Stapleford, Notts. v 295

EIGHT grand young laying Queens, 2s. 6d. each, worth double; unused tin feeders, 6d. each.—YIEND, Albion House, Cheltenham. v 290

1000 SECTIONS, first grade, wanted, price carriage paid home for cash.—NYE'S DAIRIES, Littlehampton, Sussex. v 259

SECTIONS or EXTRACTED wanted; exchange camera, microscope, phonograph, records, Tamlin 60 incubator, hives, appliances.—BOWDEN, Broomhill, Witley, Surrey. v 268

Editorial, Notices, &c.

REVIEWS.

A Method of Re-queening, by L. E. Snelgrove, B.A. (published by the author, Albert Quadrant, Weston-super-Mare, price 6d.).—The author read a paper on this subject at a conversazione of the B.B.K.A. last October, and has received so many enquiries concerning the method that he has deemed it advisable to publish a description of it. It is recognised by all bee-keepers that re-queening is a most important duty of the modern bee-keeper, but many small bee-keepers neglect it owing to the fact that they cannot spare a hive for queen-rearing or cannot go to the expense and trouble of the necessary nucleus hives. This pamphlet is just what they want, for on the plan recommended no expense is incurred by the purchase of extra appliances, the manipulations involved are quite simple, and the actual queen-rearing is done under the most favourable circumstances, the honey harvest not being interfered with. There is no period of queenlessness, and stocks go into winter quarters strong in bees, brood, and with plenty of food. We recommend this method to the attention of our readers, both as a simple and practical one.

L'Apiculture par l'Image, by Ed. Alphandery (published at Château de Brignan, Montfavet (Vaucluse), price 2 francs 80 cents).—This book consists entirely of illustrations which the compiler has had copied from books ancient and modern. It gives an idea of the number and variety of hives and appliances used at different times and now discarded. Some of the illustrations are copied without permission—such, for instance, as those from "Waxcraft"—and some of Cheshire's well known illustrations are erroneously credited to Digges. There are several title-pages of books whose sole claim to recognition seems to be the vignette containing, among other things, a straw skep. The book contains 200 pages, of which 100 are blank, the illustrations occupying only one side of each page. It is interesting and amusing as a picture-book, giving as it does an idea of bee-keeping as carried on by our forefathers, but is of no practical value.

"ISLE OF WIGHT" DISEASE.

In order to continue the investigation of contagious diseases of bees which he is carrying out on behalf of the Board of Agriculture and Fisheries, Dr. Graham Smith would be glad to receive from any bee-keepers who are prepared to send a full report of the circumstances under which they have lost any colonies of bees, including a description of their apiary and the symptoms of the illness.

(1) Queens, workers and samples of brood from stocks which are to be destroyed for any reason.

(2) Bees that are dying or have died in large numbers after visiting particular plants, such as lime trees, etc.

(3) Specimens of bees and comb from stocks suffering from foul brood.

(4) Specimens of bees from stocks suffering from "Spring dwindling."

(5) Specimens of bees and comb from stocks which have died from any unexplained cause.

The specimens (which, if possible, should be living) must be carefully and securely packed and sent carriage paid to Dr. Graham Smith, Pathological Laboratory, Cambridge.

Queen cages will be sent on application to correspondents willing to supply queens or living bees.

We have been asked by Dr. Malden to insert the enclosed letter:—

Pathological Laboratory,
Medical Schools,
Cambridge.
July 15th, 1912.

Dear Sir,—I should be much obliged to you if you would be good enough to make known to bee-keepers by means of the "B.B.J." that I shall be unable to examine any more bees for members in the future, as I have done during the past three or four years. The numbers sent have increased to such an extent that the demands upon my time are more than I can afford to give gratuitously. Any bee-keeper can obtain from the Board of Agriculture and Fisheries a form, which he can send to me with the sample of bees: the Board has made special arrangements for the payment of a fee. Those who prefer to pay their own fees can send me a postal order for 5s. with their bees, and I shall be very pleased to examine them and send a report, with advice as to treatment, &c.

I hope this arrangement will enable bee-keepers to have their bees examined when necessary, and at the same time give me some little return for the time and trouble of making the examination.—I am, yours faithfully, WALTER MALDEN.

BEE EXPERT NOT A WORKMAN.

Judgment was given at the Reading County Court, on Thursday, July 11th, in an action of great interest to bee-keepers, and especially to touring bee experts.

Last autumn, while visiting bee-keepers in North Berkshire, on behalf of the Berkshire Bee-keepers' Association, Mr. H. Edwards, of Reading, met with

an accident which for a time incapacitated him from work. The accident happened near Baulking, where a gate crosses the public road. A boy held the gate open while a cart passed through, but allowed it, probably inadvertently, to swing to as Mr. Edwards followed. The gate knocked Mr. Edwards off his bicycle, and some months elapsed before he was able to ride again.

Recently, Mr. Edwards sued the Berkshire Bee-keepers' Association for compensation under the Workmen's Compensation Act. The case turned on the question whether Mr. Edwards, who is also employed by the Buckinghamshire Bee-keepers' Association and the Buckinghamshire County Council, was a workman within the meaning of the Act. Judge Harrington, who heard the evidence, said the case was on the border-line, and he would take time to consider his decision.

At the last court his Honour gave judgment. He said the plaintiff was not a man employed at a weekly wage, but his services as an expert were obtained by the Association at a certain period of the year. He received payment on the days he performed his duties. These duties were to visit bee-keepers and give them advice and instruction, examine hives, point out and rectify mistakes, and give instruction in the handling of bees. His duties involved a certain amount of manual labour, but that was immaterial. There appeared to be no authority on the subject to assist him in his decision. He was, however, of opinion that the plaintiff was not a workman within the meaning of the Act, and he therefore gave judgment for the respondents with costs.

It may be added that the Berkshire Bee-keepers' Association have insured all their experts, and that the action was defended by the Insurance Company.—*Communicated.*

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of June, 1912, was £4,061.—From a report furnished to the BRITISH BEE JOURNAL by the Statistical Officer, H.M. Customs.

AMONG THE BEES.

By D. M. Macdonald, Banff.

COMMENTS.

Mr. Crawshaw is right in pointing out (page 266) that the proper place for manipulating a "longidea," or any hive with frames running parallel to the entrance, is at the back. I left the point unmentioned, however, because I looked on such hives as being a negligible quantity, say, less than one per cent. of the hives in use.

Mr. Soal, in his quotation on page 276, seems to have me "on the hip," and yet I was familiar with it when appealing to a departed worthy. If I have wronged him I must express my regret, but I thought (and think) the reference applies to a special case where abnormal conditions prevailed.

Weight of Bees.—Now and again we find enquiries about the weight of bees and the weight of a load of honey. I have been experimenting during the last season over this question, and submit the ascertained facts, as well as some modern and ancient estimates on the same subject. In the A B C of Bee Culture, page 474, Professor Koons weighed bees in a pair of scales so delicate that they could weigh the millionth part of a pound, and he found from 4,141 to 5,669 bees in a pound. Another experiment showed that the numbers ran from 3,680 to 5,495, with an average of 4,800. L'Abbe Collin by experiment found a pound weight to vary from 4,300 to 5,100 bees. De Galien ascertained that a pound numbered from 3,460 to 5,460. My calculation came as near as possible to 4,000 for the heavier weight and 5,500 for the lighter. The foregoing American authority states that at times 10,000 bees may carry 1lb. of honey into the hive, but at other times it may take as many as 45,642 bees. It may be taken as approximately correct to say that the average load of a bee is 1-20,000th of a pound, or, in other words, it takes an average of 20,000 bees to gather and carry home that quantity. It may be taken as near enough the truth that the books are about correct in setting down 5,000 bees to the pound. As showing how much heavier the burly drones are, 2,000 of these males will at times balance 5,000 females.

Spurious Heather Honey.—I have in my memory an advertisement which appeared in the JOURNAL some years ago offering heather honey by the ton at 3½d. per lb. when genuine heather honey was selling at about 1s. 6d. per lb. A few years ago a correspondent from the neighbourhood of Dundee sent me a sample jar of what purported to be heather honey, but which our then Editor assured him was identical in many respects with Jamaican honey then being retailed in London at a cheap rate. More recently a reputable firm in the Glasgow district turned out a low grade foreign article which they consigned to neat clear jars with a taking label. The late Mr. Carr declared that it had never "seen" the Highlands until it was shipped to this country, and Mr. Cowan, I believe, gave it as his opinion that it never was gathered from heather of any kind. In no respect did it remotely resemble any heather honey I ever saw or tasted. One of our leading newspapers recently had a standing advertisement offering genuine heather honey at a good price. The

sample submitted to me some years ago contained in my estimation a blend of some dark foreign honey, a small part might be home gathered clover honey, and just the smallest percentage was heather. The concoction had been badly mixed, and appeared as if in layers in the jar. The cork wads had been dipped in genuine heather honey, as any aroma and flavour seemed to begin and end with the top portion of the contents. Yet we are supposed to have a pure food law!

Drone Cell Supers.—At one time I had a strong preference for worker-cells only, even in shallow frames, and under certain forms of management would still favour them, but in the main if I were starting to work for extracted honey only I would go in for drone-cell foundation in all my shallow frames. I do not think that the saving of either time or material would weigh much in the balance, because almost as much wax is used in the one case as the other, and all over the time taken to build ten combs of either would mean very little saving. The points which would count are: first, bees build drone-combs in supers far more readily than worker-comb, they take to filling them more readily, and they cap them more readily, instinctively knowing that they are not of importance for the use of the queen; secondly, with a flow on, the larger vats are preferred by the honey-storers because they not only are of greater capacity but offer readier facilities for unburthening themselves when foragers regurgitate the nectar from their honeysacks; thirdly, well built shallow combs look best on the show-bench: there is a solidity about them lacking in worker-comb, and the nature of the cell capping gives a more imposing aspect to the exhibit, and I think the general appearance is more taking to the eye; fourthly, the uncapping is more easily carried out, the honey flows more freely from the cells, and less time is taken in handling one hundred of them than, say, ninety of the others.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

HEATHER HONEY.

[8495] The view recently put forward in this journal that heather honey is one of the best foods, both for men and bees, is scarcely in keeping with the opinions expressed by well qualified writers in the past, Although "A Lanarkshire Bee-keeper" is dead, his opinion remains with us, and in addition to the confirmation given to T. D. N.'s statement as to its unsuitability as a winter food for bees, it also confirms my remark that it was not the custom amongst the skeppists to preserve bees that had been sent to the heather. The full quotation was given on page 100 of the recently issued report on the "Isle of Wight" disease, so that although Mr. Macdonald has never heard of it, the information was available, and was in the possession of those who had read the report. "Our forefathers . . . . made it a rule never to take a hive to the heather intended as a stock hive." On page 27 of the report, in a section which does not meet with Mr. Macdonald's approval, is a quotation to the following effect: "In the heather country in the North of Germany bees suffer heavily if wintered on heather honey." [Beuhne, expert to the Victorian (Australia) Government.]

Mr. Macdonald speaks of his years of experience and successful wintering on heather honey. We know from the columns of the BEE JOURNAL that Mr. Macdonald's bees never swarm, and that to make up winter losses swarms are imported from the south. It is obvious that but for these importations the apiary would be in a fair way for extinction, but it is also curious that these imported bees, which have *not* wintered on heather honey, do better than his stocks which have managed to survive. And these swarms are also the only bees in his apiary which can reach swarming pitch. After a winter on heather honey, or whatever they are permitted to winter on, they have no desire to swarm. As Mr. Macdonald is *not* successful in wintering bees, his testimony is of little value. To explain the death of a stock as being due to queenlessness, or fall honey, or paucity of numbers or spring dwindling, does not alter the fact that the stock died.

Heather honey was formerly considered a rank product only fit for very poor people, who could not be choosers of their diet. Speaking of some inferior honey and its objectionable taste, Marshall, writing in 1787, says: "The evil, if not wholly, is in part occasioned by the heather, which, it is a notorious fact, affords much honey, but of a bad quality."

Keys, in 1780, put on record the view that "perhaps there is none worse." It is a well-known fact that savages prefer the brood to the honey, and uncivilised races generally prefer strong-tasting food. But it is scarcely fair to assume that every tourist who purchases heather honey is possessed of such atavistic tastes. He buys this honey as a local product and

a curiosity, and it no more affords an index of his taste than the importation of a native costume by a missionary's wife on her return from Africa is indicative of her taste in dress.

The poisoning of the Greek soldiers, led by Xenophon, was brought about by honey gathered from a plant (*Agalea pontica*) of the natural order Ericaceæ.

Honey from the mountain laurel in America (*Kalmia latifolia*) has also been known to produce severe symptoms. This plant is also a member of the heath family (Ericaceæ).

Heather honey is gathered from another plant of this order, viz., *Calluna vulgaris*, and, according to Huish, "a prejudice exists in this country respecting the inferior quality of heath honey." The reason for entertaining this opinion was that "it was the opinion of their grandmothers."

It would be interesting to know the experiences on which the grandmothers founded their objections. At eighteenpence a section, heather honey is not likely to form an important item in the diet of a bee-keeper, and perhaps its sale to the southerner is the safest course.—Geo. W. Bullamore, F.R.M.S., Albury, Herts.

THE WASTED NECTAR IN RED CLOVER.

[8496] Could not bee-keepers by working together get a red clover with a calyx short enough for the hive bee? This might be easier and more effective than producing a bee with a longer tongue. I suggest the following plan to those willing to experiment. Sow now seed of red and white and alsike clover in three plant pots, one kind in each pot, and in the following year endeavour to get cross fertilization by artificial or natural means. Then sow the seed thus procured, and if there is any resultant cross from the first year's experiment choose for the continuation of the plan seeds from the heads deemed to be most likely to lead to the desired result, viz., a strong growing plant of red clover with a short calyx. Any bee-keeper who obtains a promising cross to report to the Bee Journal and give spare seeds or plants to the others engaged in the joint experiment.—J. N. Kidd, Well Close, Stocksfield.

TIMELY CAUTION.

[8497] May I call your readers' attention to a person who is travelling about the suburbs of London representing himself as an expert of a certain association? His *modus operandi* is to call, and if the bee-keeper happens to be a novice, his stock or stocks are in every case designated as "rotten with foul brood" or "showing symptoms of 'Isle of Wight' disease," and are promptly removed to somewhere to cure (?), and, curiously enough, they always succumb. If by any chance the stock happens to have neither of the two diseases enumerated, it will probably be pronounced queenless, and another queen is promptly sent on; always stated to be a young one. In some cases where the unsuspecting novice has handed over the care of his bees to this person, he has been asked for "a little on account," and woe betide him if he dares to touch his own bees from that time on, or he is insulted and treated to a free war-dance or series of wild gesticulations in his own garden. Another dodge is to borrow eggs, brood, and queens for experimenting. If any one is visited by this gentleman they will do well to give him the cold shoulder and send him about his business.—One of his Victims.

[No bee-keeper should trust the inspection of his bees to a stranger about whom he knows nothing, however plausible he may be. Should bee-keepers in the vicinity of London be visited by such an individual, they should ask him to produce his certificate. No respectable expert would act in the way mentioned by our correspondent. Should advice be needed the novice should apply for the expert of the Association in his county, or to the Secretary of the B.B.K.A., who would put him in communication with the nearest certificated expert.—Ed.]

TREATMENT FOR "ISLE OF WIGHT" DISEASE.

[8498] As regards bee-keeping, I am a veritable novice, having my first hive (a skep), not caring to go to expense till I saw what chance the bees had in this plague-infected district. In three weeks after obtaining the swarm my caution was justified, for I noticed one morning that the bees were behaving peculiarly, and hundreds were strewn about in front of the hive on a strawberry bed, in the semi-comatose, or else agitated state which is peculiar, I am told, to the "Isle of Wight" disease. Others in a similar state were found at different parts of the garden.

Being a homœopathic physician, I was urged by my wife and children to do something for these wonderful little people that are such a pattern of self-sacrificing devotion and industry. It was distressing to us all to see them suffer, and the desire to *end* or *amend* was strong. I decided to doctor them, which I did with apparent good results, for the next day they were brighter, and fewer invalids were tumbling about. I waited for a few days, and gave them another treatment with more satisfactory results still,

and we noticed that those that were clustering on the strawberry leaves did not succumb in the night and waxed lively with the heat of the sun on the following day. The other bees are working better now after the third treatment, and there are no signs of sick ones, only a few dead or dying pupæ being dragged from the hive. Not being conversant with the latest developments, I do not know if a remedy is still being sought. If it is I should be sorry not to give this discovery a chance. I am not proposing to give the details of this treatment to the public, partly because being so simple it might meet with the usual contempt of familiarity; also that the remedy, not being made with the proper precision it might find condemnation from misapplication. However, I should be pleased to give it a proper trial, and therefore place myself in your hands. The test I should like to see tried is for a number of reliable authorities, say ten or a dozen, who can command infected hives, to treat the hives with this remedy, which I shall be pleased to furnish. I propose that those experimenting shall know nothing of the nature of the remedy, so that they will not be prejudiced, and to report in a definite time agreed upon the result. It may be that the results are negative, but no harm will be done. I therefore leave the matter in your hands, and if you can suggest a better plan I shall be pleased to fall in with it.—A. A. B., Hants.

[We commend the above to our readers, and shall be pleased to hear from beekeepers willing to try the remedy under the conditions named.—Ed.].

BRIEF REPORTS.

[The Editor will be pleased to receive brief reports of the honey season (on a post card will be sufficient) so that some estimate of the average returns in different parts of the country may be formed.]

The cold weather has spoiled the bees' harvest this season, and the white clover seems to be a poor crop, in this district anyway.—J. Brown, Stonehaven.

I should much like to know how I stand as regards early results in Scotland, or at any rate in the north of it. I have two hives of Italians. From one of these came a 5¼lb. swarm on 2nd May, and from the other I have removed 36lb. of sealed honey by 3rd June, leaving ample stores behind.—R. M., Dundee.

[Very good results, as the season up to July was not a very favourable one.—Ed.]

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A Heavy Skep (p. 234).—My apology is tendered to Mr. Bell for appearing to question his figures. I fully believe in their correctness. The skep was, as I supposed, a large one, and for moor work somewhat unwieldy. Such an exceptional skep does not, I think, prove the case for heather honey, much as I should like it proved, and the argument would be better served by a small skep containing no other than heather honey. The wonder is that such a skep swarmed at all, but it is not surprising that the swarms were large. Probably the bees regarded it merely as a bell super.

Which Hive has Swarmed (p. 241).—The flour method of detection sometimes fails, but judgment must be used with it. If the evening be hot, or bees be liberated too early, they may fly to the settling place, and remain for at least sufficient time to get rid of the apparent traces of flour. With many hives and large entrances it may be difficult to spot the returning bees in the evening light, although such bees usually fan for a short period. Light moths flying about are confusing too. Certainly the method has failed with me once or twice lately owing to one or more of these causes, although I have often used it with success. I must try it again to-night, for, as seems to be the case every day of the week now, there is a swarm waiting to be hived. This must be my excuse for short measure in this column, as my spare time—little enough ever—has been imperatively demanded of late by the vagaries of the hives. I have had enough of swarming for one season, for the bees have swarmed to an extent I have never previously experienced. Once I was rash enough to wish for a swarm from every hive. The gods must have registered the wish against such time as they should find me short of hive room.

A Hive Scale (p. 243).—This weighing device appears somewhat too cumbrous for adoption, and the necessity for careful levelling prevents it from being made portable. I should have thought that if the beam were slung from a tripod, equally good results would be obtainable with less difficulty, and with the advantages of cheapness and portability. I usually have about thirty hives at home, and such a permanent structure would not be cheap, although it might be used as the foundation for a canvas roof.

Starters, &c. (p. 253).—Too bad of Mr. Mace to dodge the "statistical problem" in this way. I had rather he would disprove it, but must be content to wait for cooler weather. My bees are revelling in this heat to a tune which I am loth to hear cease. I hardly think Mr. Mace disposes of the "reservation" point. Such comb may be held open until the flow slackens, whereas it might otherwise have been filled. I will deal with the

question of warm supers later, when I feel less disarmed by Mr. Mace's kindly appreciation.

Queries and Replies.

[8481] *Naphthol Beta Solution.—Fertilisation of Eggs.*—(1) On page 194 of the "Guide Book" (Cowan's) "pure methylated spirit" is mentioned as a solvent for naphthol beta. I cannot procure it in the *pure* state from chemists around here, as they say they are forbidden to sell it for commercial purposes unless it is adulterated with .6—I believe—of oil of tar. Would this percentage of oil of tar injure the bees, or is it *necessary* to get the pure methylated spirit? (2) Is the egg from a fertilised queen capable of producing either a worker or drone, as the bees wish; or can a *fertilised queen* lay a worker egg and also a drone egg at will? On page 8 of "The Honey Bee," the author says that "eggs in the ovary of the queen were all alike," &c. In "Modern Bee Farm" (Simmins)—the book is not at hand just now—it says somewhere that Simmins used to use drone-cells for queen-rearing, possibly for transferring larvæ into, and possibly he used them after the eggs had been laid in them by the queen, being that he (Simmins) does not care for the transferring business. Now, on page 10 of the "Guide Book" it says: "Queen-cells are sometimes constructed around drone eggs, but these will not produce queens," &c. Does the above sentence mean *drone* eggs from a *fertilised queen*? (3) Will bees, when out foraging, collect pollen from different *coloured* flowers in one *single* journey—viz., will a bee visit, after leaving the hive, a white flower and then a red flower for pollen before returning to the hive? I may mention this was the subject of an argument between a friend and myself. I say the bee will *not* visit, except rarely, different coloured flowers in one journey, and we decided to refer the matter to you for decision. The argument centred around tints in flowers: I said wind was one cause and man was another, but rarely the bee. An answer in "B.B.J." will greatly oblige.—J. J.

Reply.—(1) You can use the ordinary methylated spirit, or, if more easily obtained, sweet spirit of nitre will do. (2) The queen has power to either fertilise the egg when being laid or allow it to pass without fertilisation. A fertile egg will produce workers only, an unfertile one drones only. (3) The bee generally keeps to one kind of flower on each journey.

[8482] *Earwigs in Hives.*—(1) What is the best way to kill earwigs in a beehive? (2) When should bees go to the moors? (3) What time of the year should they be allowed to transfer themselves from skep to frame-hive?—G. V. E., Hebden Bridge.

Reply.—(1) Place powdered naphthaline under the lugs of the frames. (2) August. (3) In the spring.

[8483] *Time for Supering.* — When dealing with a strong stock, is it *always* safe to wait for the elongation of the cells before supering? I was afraid to wait for this because the hive in question seemed so crowded, and I thought the bees would prepare to swarm.—W. E. C., Bromley.

Reply.—No. If the hive is very crowded, and nectar coming in, put on the super.

[8484] I shall be pleased if you will kindly answer the following queries:—(1) If a swarm-catcher is fixed at the entrance of a hive for the whole swarming season, does this prevent the drones from taking their usual flights? (2) Is it not possible to use an empty box in place of the box containing frames of foundation usually found in swarm-catchers?—G. B., Kirkham.

Reply.—(1) Yes. (2) It is possible, of course, but if the hive should be neglected, and the bees build combs, their energy would be wasted.

[8485] *Too Early Supering.*—Last autumn I purchased a strong stock of bees; the sections had already been removed from the hive. I left them eight full frames of honey and two empty frames for the winter. In Easter week I put on a rack of shallow frames, but the bees have not gone into them. On examining the hive this week I discovered that the bees had eaten nearly all the honey, there being about half the quantity there that there was six weeks ago. This is very discouraging to a beginner (they are the first bees I have kept, and will probably be the last). Had I better feed them with syrup? if so, will you please give me a recipe for making it.—Novice, Worcester.

Reply.—Unless you buy a good text book, such as the "Guide Book," and read it you had better give up bee-keeping. You ought to have been feeding the bees at Easter instead of putting on a super. The fault does not lie with the bees but with yourself, through lack of knowledge of their requirements.

[8486] *Advantage of Using Full Sheets of Foundation.*—Being a reader of your journal I would like to ask the following:—(1) On July 2nd I had a cast from a hive, and next morning I found a dead queen, and in the afternoon another swarm came off. I want to know how this queen got there and why the swarm came off so quickly after the first cast. (2) If I use full sheets of foundation. do the bees pull it out or do they build on to the foundation? I

have been told that they do the latter. If this is correct, what advantage is there in using full sheets? (3) I have a neighbour who has bees, which have been a long time in the same frame-hive, and he wants to transfer them to another, as they build the combs very irregularly. How must this be done, and what time of the year?—W. R., Grampound Road.

REPLY.—(1) The dead queen sent is a young one, killed in fighting. It is no unusual thing for a second cast to come out. (2) The bees work out the wax to a certain extent; how much depends upon the thickness of the foundation used. The advantage of using full sheets lies in preventing the rearing of drones in excessive numbers. (3) In the spring; work them down as described for a skep on page 149 of "Guide Book."

[8487] *Persistent Swarming.*—I had a swarm of bees from a frame-hive on Sunday last, the 7th inst. They were safely hived in a straw skep, and placed on a stand in the evening. The next day they were very restless and came out again, but were again secured and put into a larger skep, being placed on the stand in the evening as before, and capped with another skep. They were very busy on Tuesday at intervals; at other times were all over the skep, and would not leave at all. On the Wednesday they swarmed again. I again caught them and placed them on their stand, as per Monday's procedure. Am I right in so doing?—G. D., Westwell.

REPLY.—Bees will act in this way at times, especially when the weather is very hot. Give more ventilation by propping the hive up a little.

[8488] *Need for Legislation.*—I am a constant reader of your valuable paper, having had over sixty years' experience in bee-keeping, and I was very much alarmed to find that the "Isle of Wight" disease had broken out here. I visited the affected hives, and, considering what I have read on the subject of this disease, I had little difficulty in recognising it. I have several good hives in close proximity to the affected apiary, and I should like to know what steps can be taken for the destruction of the diseased bees. Can I compel the owner to have them destroyed? A reply to this question in your BRITISH BEE JOURNAL would oblige, as it is necessary to work on safe ground. Who would have to pay the expenses?—G. C., Hexham.

REPLY.—You can do nothing. If you destroy the bees the owner can sue you for damage. A clear case showing the need of legislation.

[8489] *Drone Cells in Supers.*—I have five strong colonies, which I supered on April 25th, and on May 15th I lifted the racks of sections and shallow frames respectively, putting another super underneath. I may say the shallow frame combs were built out when put on the hives. I went a few days ago to take off, as I anticipated, the top racks full of honey fit for extracting, or sections ready for my customers, and to my sorrow there were a few complete sections in each rack, but not one single completed frame did I find. I examined the hives, and found, after full inspection, drone brood in the frames and a few cells in the sections, some hatched and some hatching. (1) Is this caused through my neglecting to use full sheets of foundation, or are there other reasons? On coming to the brood-chamber I found no cells sealed with honey along the top bar, but several dead drone larvæ in the cells with sunken cappings and a few (dead larvæ) unsealed, of which some were black and others had not lost their colour; there was no unpleasant odour. In front of the hives there were dozens of dead drones and a few dead workers, which had been thrown out. (2) Is this any kind of disease, or is my trouble the result of the wretched weather which we have had to endure from the middle of May? The bees work well on fine days. None of these colonies have swarmed this season, to my knowledge; they were last year's swarms. I reckoned to have taken from these five stocks 300lb. of surplus this year. (3) Is this expecting too much?—F. O., Blandford.

REPLY.—(1) Drone cells have been made because you did not use full sheets of foundation. (2) The brood has evidently been chilled through the bad weather. (3) No. The average yield should be about 70lb. per hive.

[8490] *Various Queries.*—Recently my bees swarmed. I cut out the queen-cells immediately, but one was open at the bottom. I was surprised at this, as I thought the swarm issued about three days before a new queen hatched. I returned the swarm, but it issued again on the third day, and I regret to say I lost it. I may say the weather had been very bad, and a thunderstorm came on shortly after the swarm issued the second time. (1) Is it possible that the new queen left her cell before the swarm came out the first time? (2) In the second issue (third day) do you think the storm was the cause of its making off? (3) The stock is working well, the bees even drawing out comb and capping honey in the super. Do you think continued bad weather would induce some of the swarm to return at fair intervals? (I ask this because if the swarm had got under cover the weather for several days after would prevent them from foraging.) (4)

Would queen-excluder over the entrance prevent swarming, as the queen could not issue? (5) What is the average weight of honey in a fully capped shallow frame? (6) How long will a bee live after losing its sting? (7) What is the best known treatment for reducing the swelling after being stung? (8) My centre combs are fairly well filled with honey and partly capped, but the outside frames are not fully drawn out. Can you kindly say when I ought to tier up and place the second super under the first? (9) How long should extracted *uncapped* honey be left in ripener to ripen? (10) If bottled after time you mention, would it or would it not ferment? (11) Is it necessary to ripen capped honey? (12) If uncapped and capped honey were mixed, would it ferment if allowed time for whole to ripen?

Pardon my asking such miscellaneous questions, but as your excellent paper is my only authority on points outside the "Guide Book," I have been saving them so as not to trouble you too frequently.—H. T., Worsley.

[(1) Quite possible, but more likely you missed a queen-cell. (2) No. (3) We do not think any of the bees from the swarm would return. (4) It would cause crowding and stop the ventilation, so the bees would be suffocated. (5) About four pounds. (6) They vary very much; about five hours is the average. (7) Bathing with hot water to which a little vinegar is added. (8) The second super should be put on when the first is about two-thirds full. (9) About a month, but you must use your own judgment. (10) If properly ripened, no. (11) No. (12) No.

[8491] *Novice's Queries.*—I should esteem it a favour if you will answer the following questions through the "B.B.J.":—(1) Is it customary when buying bees for the buyer to pay carriage both ways, no arrangements being made or mentioned between the two parties? (2) I have one very strong hive, supered, and wish to increase my stock. If I divided them in a fortnight or three weeks' time, do you think I could get both lots strong before winter set in if I fed them well, and supplied the old stock with a fertile queen? (3) I noticed whilst examining the super one or two cells containing a dark substance; they stood singly, and there were not many in the whole super. What were they likely to contain?—A. W., Ilkeston.

Reply.—(1) If you buy bees we do not see how you can pay carriage *both ways* as the bees travel only a single journey. If you mean: is it usual to pay carriage on the bees and also on returned empty box, the answer is "Yes." (2) Certainly you might. (3) The dark substance is no doubt pollen.

Bee Shows to Come.

July 24th, at Over Wallop.—The Annual Honey Show of the Wallop Horticultural Society will be held in the grounds of Southern Farm. Open classes; no entry fee. Schedules from Mr. Pryce Roberts, School House, Nether Wallop, Stockbridge.

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton. **Entries close July 27th.**

August 1st to 5th, at Preston.—Annual Show of the Royal Lancashire Agricultural Society. Honey and Bee Appliance Section. **Entries closed.**

August 5th, at Melton Constable.—The Annual Show of Bee Produce of the North Norfolk B.K.A. will be held in connection with the Melton Constable Horticultural Society. Schedules from Hon. Sec., D. Wardleworth, Sheringham, Norfolk. **Entries close July 29th.**

August 5th (Bank Holiday), at Cambridge. Honey Show in connection with the Cambridge Town and County Mammoth Show Society. All open classes. Silver and bronze medals of the B.B.K.A. to be competed for; also another silver medal and three special hives. This show also includes dogs, poultry, pigeons, rabbits, cage birds, flowers, fruit and vegetables; also grand programme of sports and motor racing, &c. Balloon ascent and double parachute descent by Captain and Miss Spencer. Special engagement of the Black Dyke Band. Mr. W. Herrod, F.E.S., expert to the British B.K.A., will lecture and demonstrate in the bee and honey department during the day. Schedules for bees, honey, and horticulture from Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge-street, Cambridge. **Entries close Thursday, August 1st.**

August 7th, at Blythe Bridge. — Blythe Bridge Horticultural Society. Section for Bees, Honey, and Wax. Open classes. Schedules from Chas. Beeston Blythe Bridge, Stoke-on-Trent.

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester. **Entries close August 3rd.**

August 14th, at Wye, Kent.—11th Annual Exhibition in connection with the Wye Grand Horticultural Show. Classes to suit all Bee-keepers, great and small; two 5gs., one 6gs., one 2gs. cups in different classes. Various classes open to Kent, Surrey, Sussex, and United Kingdom. Splendid prizes and low entrance fees. Send for schedules to Mr. Alfred Lepper, Secretary, Kent Honey Show, Wye, Ashford, Kent. Note.—Schedules will be sent to competitors of 1911 without application. **Entries close August 5th.**

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 22nd, at Abington Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

Notices to Correspondents.

M. R. (Kent).—*Dead Queen.*—The queen was drowned in honey, therefore it was impossible to make an examination.

O. J. C.—*Bees Casting out Brood and Young Bees.*—When using Ayles' Cure, the bees occasionally act as yours are doing. Have you carefully followed the directions for use?

F. F. J. (Sunbury).—*Show Honey-jars.*—Most appliance manufacturers supply special jars for show purposes at a little extra cost.

A. H. H. (Longford).—*Excessive Drone-breeding.*—It is the work of a laying worker. The best plan will be to unite to another stock.

G. J. B. (Wednesfield).—*Stocks Casting Out Immature Bees.*—You evidently used the hive too soon after treating with the Ayles' Cure, and this is the cause of the trouble.

W. W. R. (Dunster).—*Remedies for Bee Disease.*—(1) and (2) Use Apicure. (3) No. (4) Yes, but it is much safer to use syrup made from cane-sugar instead.

C. B. (Bury St. Edmunds).—You should communicate with the Secretary of the County Association.

F. B. (North Cheam).—*Queens cast out of Swarmed Stock.*—Both are unfertile queens.

I. R. (Higham).—*Kind of Bee.*—Both bees are queens.

Redenham.—*Unripe Honey.*—The only plan is to feed the honey back again to the bees, and let them ripen it naturally.

W. H. B. (Yorkshire).—*Dead Queen.*—The queen was crushed to pulp through bad packing. You should have sent her in a tin box.

Honey Samples.

J. B. N.—Samples of honey should be sent in glass receptacles, well corked, and carefully packed to avoid breakage. The tin was empty upon arrival here.

Ayrshire Boy.—The honey is a splendid sample, and should stand a good chance on the show bench. Keep in a cold place, and it will set quite hard again.

J. C. (Blackheath).—No. 1 is a nice sycamore honey. No. 2 is very inferior, being thin and lacking in flavour.

Suspected Disease.

Mrs. B. (Aberfeldy).—There are certain signs which point to "Isle of Wight" disease, but some of the bees have died from exhaustion through being overladen with nectar.

E. C. B. (Brighton) and J. W. Brancaster.—The comb contains nothing worse than pollen.

J. S. T. (Bridgnorth), G. C. (Keswick), J. W. H. (Gt. Ayrton), Nemo (Leicestershire), A. J. T. (Knowle), L. D. C. (Dublin), and J. H. (Hants.).—The bees are suffering from "Isle of Wight" disease. It will be best to destroy them.

J. C. (Lanark).—The bees were very dry, and so far as we can see there is no disease.

J. W. H. (Westerham).—Bees have "Isle of Wight" disease. It is best to destroy the honey.

T. W. W. (Ringmer).—The bees are suffering from "Isle of Wight" disease. You can use Apicure at the same time for foul brood.

G. D. (Wilts.).—The bees are suffering from "Isle of Wight" disease. Try the cure for a month, and if no improvement appears destroy them.

R. W. (Hitchin).—Both lots are affected with "Isle of Wight" disease.

Thornton (Lancs.).—"Isle of Wight" disease. The brood does not appear to be affected with this disease.

C. F. (Lincoln).—Comb is affected with foul brood.

E. H. W. (Rhyl).—(1) The comb contains pollen only; there is no brood at all. (2) and (3) If all the combs are as badly clogged as the one sent, it will be well to melt them down and start with new ones.

R. N. P. (Hayes End).—We see no signs of disease, but several of the bees were overloaded with nectar.

C. H. S. (Mobberley), E. G. (Hinckley), Warwickshire Reader, H. C. T. (Edgbaston), R. P. P. (Durham).—The bees show every symptom of "Isle of Wight" disease. The wisest course is to destroy the diseased stocks.

A. H. (Cheringham) and Miss C. T. (Oxted).—Bees were too dry for us to examine properly, but we fear it is "Isle of Wight" disease.

L. W. (Moseley).—The bees were drowned in honey, and it was therefore impossible to examine them.

J. H. (Woking).—The bees were too dry

for satisfactory examination, but from what you say we fear the trouble is "Isle of Wight" disease. We hope the Ayles' Cure will check it.

J. A. U. (Knutsford).—The bees were crushed to pulp through want of proper packing. We should say, from your description, that it is "Isle of Wight" disease.

H. D. (Felixstowe).—The comb is affected with foul brood. Use Apicure.

J. A. B. (Birmingham).—We can only find chilled brood in comb sent.

H. L. (Winslow).—The cause of the trouble is "Isle of Wight" disease, and you were wise to destroy the stock. The foundation is all right.

A. R. (Wales).—The bees were much too decomposed for us to examine them, but the symptoms described point to "Isle of Wight" disease.

Beacon Star (Bilston).—We are much afraid that it is "Isle of Wight" disease. If you used genuine "Weed" foundation there is no damage of infection from it, but if it was a cheap, inferior kind there might be grounds for uneasiness.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

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PRIVATE ADVERTISEMENTS.

FOR SALE, few stray Supered Stocks, headed with 1912 fertile Queens, on ten new wired frames, with brood, 22s.; or hive complete, 29s.; also about 1cwt. Extracted Honey, in bulk; what offers? sample, 3d.—F. SOFTLY, Letchworth, Herts. v 307

SPARE Carniolan Stocks and Hybrids, from 25s.—BICKMORE, St. Edmund Hall, Oxford. v 304

APPLIANCES. — Cheap clearance; 2 Hives, Honey Extractor, &c., &c.—BROWN, 3, Windsor-road, Leyton, N.E. v 297

GOOD strong healthy Swarm, June 16, price 12s. 6d.—WARREN, Simpson, Bletchley. v 302

FOUR strong Swarms, in frame hives, hived on drawn out comb, guaranteed healthy, 25s. each.—HIGGINS, Ivydene, Neath. v 301

FOR SALE, four W.B.C. Hives, with body box and extra lifts; four Racks of fully worked shallow frames; four Racks of Sections, waxed; four Queen Excluders; one Smoker; three dozen 1lb. Honey Bottles, with screw caps, the lot for £3 10s.; all clean and in perfect condition.—T. BARNES, Mill View, Chobham, near Woking. v 295

SEVERAL extra prolific 1912 laying Queens, 3s. 3d.; Virgins, 1s. 9d.; also a few 1911 Queens, 2s., guaranteed healthy.—R. WOOD, Spring Bank, Ripon, Yorks. v 294

FOR SALE owing to removal, several strong Stocks of Bees, on ten frames, 1912 Queens, guaranteed healthy, 27s. 6d. each, carriage forward; boxes returnable, or 2s. 6d. each.—SPRATLING, Expert B.B.K.A., Downton, Wilts. v 292

FOR SALE, cheap, two 1½cwt. Ripener-Strainers, 10s. each; Shallow Combs, 4d.; Feeders, Frames, Ends, Queen-rearing Hives, Crocuses, 5s.—Apply, J. CHAWNER, Desford, Leicester. v 291

LEE'S Extracting Outfit, complete, new, cost 30s.; what offers?—HULBERT, Hermitage, Worcester. v 289

FOR HEATHER; can spare three strong Stocks, ten frames, 16s.; W.B.C. 1911 Hives, 15s., guaranteed.—RECTOR, Achurch, Oundle. v 286

OVERSTOCKED; ten strong Stocks, in well made Hives, on ten frames and rack of sections, complete, £15, packed f.o.r., or will exchange, give cash, for 1910 or 1911 Triumph, free engine.—WARD, Bee-keeper, Leamington Spa. v 267

FOR SALE, strong Stocks of Bees, in W.B.C. body-boxes, 19s. each; also clean drawn out Shallow Frames, 4s. 6d. doz., free on rail, guaranteed free from Isle of Wight disease.—A. GREEN, Tangley, Andover. v 288

TWO HONEY EXTRACTORS, 15s. and 7s. 6d.; Ripener, 200lb. to 300lb, 5s.; 12 Excluders, 4s.; Uncapping Knife, 1s.; Wax Smelter, 4s. 6d.; volumes "B.B.J.," valuable, bound.—BASSETT, Curridge, Newbury. v 223

FOR SALE, about twenty Colonies, on 8, 10, or 12 frames; or Swarms (artificial); Colonies at 3s. 6d. per frame; Swarms at 15s. per swarm; inspection before buying invited; cash with order.—CHAS. J. ASHWORTH, Heytesbury, Wilts. v 226

A FEW choice fertile 1912 Queens, 3s. 6d. each.—SNELGROVE, Albert Quadrant, Weston-super-Mare. v 284

FOUR SWARMS of Simmins's White Star Italian world-famed strain, wonderful workers, prolific Queens, bargain of the season, only 15s. each.—G. TUDOR-WILLIAMS, B.B.K.A. expert, Aberdare, Wales. v 280

SPLENDID new English Clover Honey, 60s. per cwt.; sample, 3d.—A. COE, Apiary Hall, Ridgewell, Halstead, Essex. v 294

EIGHT grand young laying Queens, 2s. 6d. each, worth double; unused tin feeders, 6d. each.—YIEND, Albion House, Cheltenham. v 290

FOR SALE, or exchange for Bees, &c., six good black Airedale and Spaniel Puppies, will make good workers or guards, &c., price 12s. 6d. each.—Apply, W. A. ALLFREE, Talbot Inn, Mansfield. v 99

FOR HIRE, a "Herrod" demonstrating tent, 10s. 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand, W.C.

BUSINESS ADVERTISEMENTS.

HEALTHY DRIVEN BEES, commencing August 1st, with Queen, 4s. 6d. per lot, cash with order; orders in rotation, boxes to be returned.—T. PULLEN, Ramsbury, Hungerford.

Editorial, Notices, &c.

REVIEWS.

Producing, Preparing, Exhibiting, and Judging Bee Produce, by William Herrod, F.E.S., Junior Editor "B.B.J." and Secretary B.B.K.A. (London: British Bee Journal Office, price 2s. and 3s.)—We have here a book the want of which has long been felt, for up to the present time no work has appeared which has treated of the subject in a practical manner. The author has had more experience in managing the largest and most important shows in the country than any one, and has consequently had better opportunities of studying the requirements than many of those who profess to give advice. The chapters contain not only practical advice on getting bee produce suitable for the show bench, but also the proper way to prepare it for exhibiting with a fair chance of obtaining awards. All the stages of the work are fully described in clear and simple language so that even the tyro cannot fail to understand them. Not only does the book contain instructions for the producer, but there are also useful hints as to judges and judging, which it would be well if those aspiring to become adjudicators at shows would study. There is sound practical advice on every page of the work, given by one who from long experience is especially qualified for the task. The illustrations with which the book abounds will be a great help in showing what the exhibitor should aim at and what he must avoid. If the directions so clearly given are carried out, exhibiting must result not only in a source of pleasure but also of profit to the bee-keeper. We predict a ready sale for the book, and can thoroughly recommend it to our readers as a valuable addition to practical bee literature.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(Continued from page 232.)

No. 19.—charlock or kedlock (*Sinapis arvensis*).

Nat. Order. *Cruciferæ.*

This is one of the most troublesome weeds with which the farmer has to contend. If we watch the green cornfields during June, slight indications of Charlock are first seen, and day by day as more blossoms expand the streak of yellow becomes larger and more pronounced, until sometimes from a distance the interloper appears to be a legitimate field crop, so largely does it occupy the ground; while the whole expanse glows with the golden yellow.

So hardy and persistent is this weed that very often in the autumn we get a large second crop. On October 21st last year, when going up to one of our meetings in London, I noticed between Bedford and Luton a field quite yellow with Charlock, which for the moment caused me to wonder whether it was autumn or summer time. The bees in its locality would have a splendid time for late pollen, but I am afraid in this case there would be very little—if any—nectar.

At one time this plant was not only considered to be injurious to growing corn, but farmers and others had an idea that its seeds would get amongst the grain and impart some defect to the flour, although this was hardly probable, by reason of its much smaller size, as it could be easily riddled out. It was—and may be still—used for mustard, though it is much more pungent and bitter than the seed of the cultivated mustard. The seeds have also been used for the oil which may be extracted from them. The bee-keeper looks upon this plant with far more favour than the farmer, for to him it is a source of abundant nectar and pollen. The honey obtained from it granulates more rapidly than it does from any other source with which I am acquainted, and in some seasons more than others; I have sometimes found it already granulated in the super when removed in July. It is of a light golden colour, rather pungent; and although I do not consider it a very palatable honey, I find many have a great liking for it.

There are other similar plants which are apt to be called Charlock, but the one under consideration is the most common, and many writers refer to it as "the most abundant weed in Europe."

The generic name *Sinapis* is a Greek word, meaning mustard, while the specific title is one applied to many other plants besides this one—signifying its home in the fields. Some early blossoms may be found even in May, but June is the month in which it ordinarily flowers.

It varies very much in appearance under different conditions of growth, and when found amongst corn it is both taller and stronger than when growing on waste

or open ground. It also varies in degrees of hairiness, and in the colour of its stem, which is sometimes quite green, or purplish; although the flowers always retain the same golden-yellow colour.

The plant is an annual, and may soon be got rid of by pulling it up before seeding, if only one would take the trouble to do so. It grows from 1ft. to 2ft. in height, upright branching, and, as stated, *sometimes* hairy. The leaves are arranged alternately on the stalks, are borne and thrown boldly out from the plant, are rough with very short hairs, the margins being coarsely serrated, and the veins very prominent.

The calyx consists of four sepals, which are long and spreading. The seed vessel is a rounded pod, containing some six or eight black seeds, and terminating in a pointed beak.

The flowers are rather large, the four heart-shaped petals standing boldly out in form of a cross. Like all other Cruciferæ the Charlock has six stamens, two being shorter than the other four; but, as they are similar in colour to the petals, they do not attract much attention.

The pollen, when dry, and seen by reflected light, is of a lemon colour, ovoid in outline, having three lobes, the whole being covered with short pimples or spines, and has very much the appearance of a lemon, both as regards its rough texture and colour. By transmitted light it is a golden-yellow, and measures $\frac{2}{1000}$ in. by $\frac{1}{1000}$ in. See drawings Nos. 1 and 2 with enlargement.

When placed in honey, or other moisture, it becomes shorter and thicker, and measures $\frac{1\frac{3}{4}}{1000}$ in. by $\frac{\frac{3}{4}}{1000}$ in. as in No. 3.

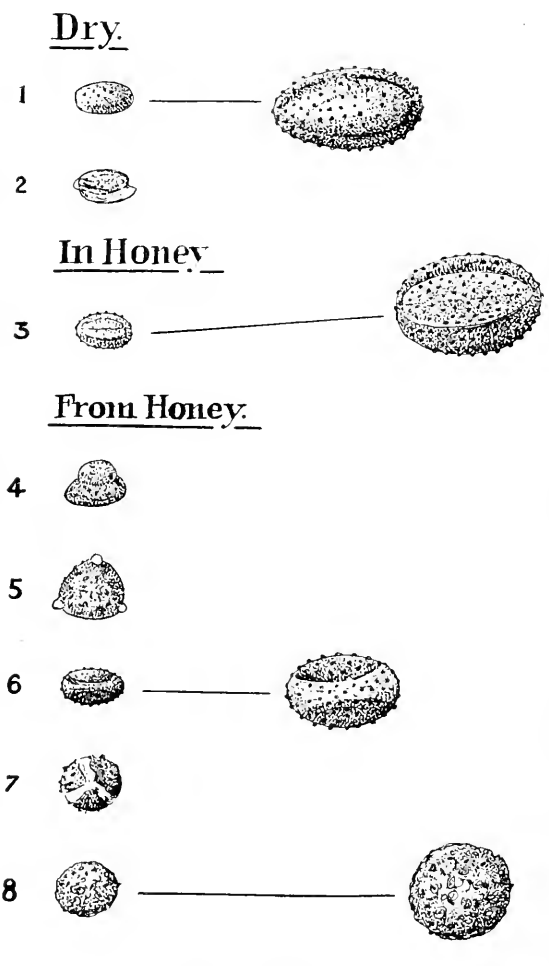
After remaining for some time in honey it becomes more transparent and assumes a more circular form; but retains the lobes and spines seen in No. 3.

When abstracted from honey it is found in various forms, as shown in different positions in Nos. 4, 5, 6 and 7, viz., that of a sphere with three elliptical bands stretching from apex to base, the spines still being well marked.

There appear to be two kinds of pollen grains in this flower, some, the most numerous (see No. 8), being transparent and bright, whilst others are wrinkled and dull, the wrinkles being very opaque and allowing of little light passing through the grains, except at the interstices of the wrinkling. It is possible that these latter are diseased grains, but I have not been able to prove this.

This pollen will be noticed to be very similar to that of the Wallflower (*Chieranthus cherii*), which belongs to the same order; but upon careful examination marked differences will be found, that of the Charlock being more regular in outline and constant in form. It is also a shorter ellipsoid.

(To be continued.)



POLLEN OF CHARLOCK.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

INCREASE.

(*Continued from page* 274.)

Another method of increasing is by utilising a number of stocks to make an extra one. As an illustration, we will suppose that the number of stocks at our disposal is four and that we desire to make a fifth, utilising all the four for the purpose. Have ready the new hive with ten frames fitted with full sheets of worker base foundation. Stand it at the back of the hives to be operated upon. Take out two frames from the new hive and go to hive No. 1; remove two combs from this containing as much sealed brood as possible, shake each one clear of bees, and place them in the vacant space in the new hive. Close up all the combs in the hive and insert the two frames of foundation, one on either side of the brood nest, and wrap down warmly. Proceed in the same manner with Nos. 2 and 3, so that six combs of brood are obtained. These are in the new hive, with two of the frames of foundation on either side. Cover down snugly; remove No. 4 stock (which has not been touched at all) to a new stand, and place the new hive in its position. Thus three stocks provide brood and the fourth provides the bees.

Having grasped the principle, it is easy to adopt it to any number of stocks, from three to eleven; the smaller the number the more brood must be taken; the larger number at our disposal means that they are checked the least in their work. Thus if we have three stocks, three combs of brood must be taken from each of two, and bees from the third; if we have eleven it is only necessary to remove one comb of brood from each of ten and obtain the bees from the eleventh.

If it is possible to give a fertile queen to the new lot at the end of twelve hours they will thrive better; if not, then they must rear one for themselves. The rearing of a good queen can be regulated to a certain extent by the bee-keeper, and to this end it is advisable some few days previous to the operation to insert into the brood-nest of the best stock in the apiary a frame fitted with a full sheet of foundation, so that it will be built out and the cells full of eggs on the day required. This comb should be one of those given to the new lot, several of the cells being enlarged to induce the bees to build queen-cells. At the end of about five days go carefully over the combs and destroy all queen-cells, with the exception of those on the special one; otherwise, in their anxiety to provide a queen, the bees may build a queen-cell round a larva that is too old, *i.e.*, more than three days, when the weaning process begins. If this is done an indifferent queen will be produced, usually called a "scrub queen."

As the remainder of the combs contain sealed brood young bees will be emerging all along, and these are the most suitable ones for providing the chyle food for the princesses, while the old bees will go foraging, and so keep up the food supply. If bad weather follows the operation, then feeding must be resorted to.

During the operation of putting the brood-combs into the new empty hive care must be taken that they are covered with warm quilts, or the brood may be chilled by long exposure.

Another method of increasing and also obtaining surplus can be followed if a stock swarms naturally when it has a super on, in which the bees are working. In this case the stock that has swarmed is moved to a new position, the new hive placed in the position it occupied, the super being placed on the swarm. This method is more successful if fully built combs are given in the brood-chamber for the swarm. This crowds the bees and forces them into the super, and also saves them the work of comb building.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

VARIOUS TOPICS.

[8499] Mr. Crawshaw has exemplified the truth of the old adage, "Many a true word spoken in jest."

Before the publication of my article describing the hive scale he suggested a "scaling ladder" as suitable for the purpose. A bee-keeper who has since read the article thinks a step-ladder would form a good portable support for the scale. Mr. Crawshaw now favours—seriously this time, no doubt—a tripod. There is no reason why, so far as I can see, such supports might not be used, bearing in mind, of course, the great weight they have to bear and also that the weights will be on the end of a very long lever. Those who have to do with camera tripods will appreciate the cussedness of such things. A tripod would have to be re-adjusted for each hive. I do not think it would ever be necessary to weigh thirty hives. The labour of daily weighing and tabulation is considerable with only three or four.

Now, with regard to the "statistical problem." It is quite true, as Mr. Crawshaw says (page 285) that the saving is

very small, but that it is a saving he has to admit, even after making all allowances for use of the strips in other directions. Mr. Crawshaw is rather inclined to exaggerate the proportions of things. In my original remarks I certainly did not lay any stress on the saving. It was simply a slight additional reason to justify giving bees a little more room for comb building.

Apropos of foundation, I notice a query this week (page 286) which emphasises the fact that after a certain point wax given to bees is wasted. They do not "draw out" all the surplus wax of comb with a very thick midrib. Having procrastinated in the matter of procuring foundation this season I was obliged to put some thick super in sections, and the thickness of the midrib after the sections were finished is a striking object lesson.

Everyone seems to be troubled with swarming fever this year. The first one or two are very welcome, but after a time one gets, to use the Cockney phrase, "fed up with it." One of my last year's driven lots—wintered on four frames and built up so rapidly in spring that they stored from the hawthorn in supers—threw a swarm just after midday three weeks ago. My bees have an unpleasant knack of swarming just before dinner-time, and this particular lot took it into its head to settle near the top of the sycamore tree, so that the ladder had to be dragged forth and an aberuncator secured. When, after ascending, I examined the cluster, I found it was in two parts, so I concluded that a young queen had come out—a fact which was subsequently confirmed on examination of the old stock. When they were ultimately secured and thrown together, the lot weighed 6½lb. When I had hived it, as I was obliged to do owing again to the aforesaid procrastination, on a rack of shallow frames, I just looked into the hive and saw an immense number of queen-cells, one of which had just been vacated. "To-morrow," I said, "I will cut them all out but one, and give four frames of brood to the swarm." "To-morrow" found me with other matters in hand, so that I was only able in the evening to knock up a brood-chamber for the swarm and get ready a couple of standard frames. The day after was Sunday, and I like peace on Sunday. I had just returned from church when the familiar noise assailed my ears, and I was shortly after climbing over fences to capture the cast which this hive sent out. I could not be bothered with them, so I just threw them back, then and there. They went in peaceably enough, and stayed until the very moment on Monday that I was going down to give them the proper attention. Then they issued derisively in front of my very nose and formed two artistic clusters on my neighbour's standard roses. I scooped them into a skep and then I cut out nine queen-cells from the stock, took the frames of sealed brood I wanted for the swarm, and put the cast back. "Now," thought I, "that's all right." And so it was for two days. On the Wednesday they were out again leaving only youngsters behind, so I was reduced to pulling down a supered hive for a frame of brood. That was the end of it, but it was one of the sharpest lessons in the value of promptness and preparedness that I have ever had.

A neighbour of mine asked me to come and see his bees, which were not storing in supers, although the honey-flow was half over. The bees were strong enough, but all on the wrong side of the excluder. I pulled this off, and in two days the rack was filling at a tremendous pace. *Verb sap.*—HERBERT MACE.

"ISLE OF WIGHT" DISEASE?

[8500] The following experience may be helpful to brother bee-keepers who have so far not made intimate acquaintance with the above dreaded scourge, and may, like myself, be inclined to draw too hasty conclusions from suspicious symptoms.

Mr. Bee Mason's plea for more natural conditions for our bees decided me to follow his methods so far as *swarms* were concerned this season. When, therefore, my best stock threw a strong swarm on May 29th I hived them with *starters* only on eight frames in the body-box, and a section rack with starters above this, but—a concession to "modern methods"—they *also* had two frames of brood and stores. All went well, apparently, through the uncongenial month of June, till on July 2nd I noticed two or three dead bees on alighting-board and several crawling on the ground and up grass stems around.

Next day things were much worse, the ground was littered with dead and dying bees, whose numbers were continually added to by others, with wings apparently paralysed, crawling from the hive and struggling down the alighting-board. Being very busy and having no proper disinfectants at hand, I delayed examination till the following day at evening, then, armed with fresh lime and corrosive sublimate, I opened the hive. The desolation within and around was pitiable: a small cluster, the queen in the midst, alone clung to the brood-combs, packed from top to bottom with broods in all stages, mostly chilled, but there was *not a sign of stores!* A glimmer of the truth came to me even then: but the symptoms, the crawling bees, the yellow evacuations everywhere outside all seemed to point to the dreaded disease. Quickly the healthy bees were transferred to an Ayles'-treated hive, and the funeral pyre smoked over

the victims—all, that is, but the few posted to Dr. Malden.

Next week came back the report: "No sign of disease in bees sent." So ends my first case of "Isle of Wight" disease; the feeder used in time would have prevented it! No doubt, in this season of late swarms and uncertain weather, many others, especially skeppists, will have similar experiences. It is for their possible help I write this. Let us not be too ready to diagnose the thing we fear till other explanations of alarming symptoms have proved untenable.

Following on this I would ask "A. A. B." (see issue 18th inst.) if he is *sure* his bees had the disease at all; whether his trouble may not have been the same as mine—starvation—(this more particularly as he tells us they were a *swarm* in a *skep*), and whether he verified diagnosis by dissection and microscopic examination? *Every* effort to stamp out this plague is of value, only let us be sure of our ground at each step.—H. E. Scrope Viner, Tewkesbury.

WASTED NECTAR IN RED CLOVER.

[8501] Mr. Kidd's suggestion (page 284) may be a very good one for producing a new species of clover, but I fail to see how by this means he will obtain nectar from the ordinary red clover.

Supposing that by experimenting we are able to produce a species of red clover with the calyx short enough for the hive bee to work it; the result of our experiments will be that we have simply produced a new clover; and the present existing red clover will remain in abundance and still be unassailable so far as the hive-bee is concerned. By working out Mr. Kidd's idea we shall be introducing a new plant for the bees to work upon, and not replacing one from which at the present time they are unable to gather honey. Therefore the nectar that is wasted on account of it being unobtainable by the bees will still be wasted, no matter how many new species of clover we introduce, and we must therefore produce a bee able to deal with the red clover, as this is the only means by which it is possible to obtain this wasted nectar.—A. D., Willesden

ROSS-SHIRE NOTES.

[8502] The clover honey harvest is about over, and locally, at least, very few finished sections have been secured.

June was a most unfavourable month, and uncared-for bees died out up to the eve of the honey-flow.

The present month has been warm and dry, but there is a general complaint that bees are slow about filling, and still slower in sealing over the sections. My own experience is similar. I had no swarms, and my stocks were strong enough to occupy and store in three and even four supers, but none have more than one rack sealed as yet.

Fortunately, the empty supers were in every case put on top of those previously given, so the month's work per colony can be classed as one completed rack, a second filled but unsealed, and a third with drawn comb only. If all goes well at the moors we should get the second racks completed as a heather blend and the third filled with pure heather honey. I find it an advantage to dispense with dividers when working for this last most precious crop. Their removal permits the bees to cluster more densely in the super, and the result is better filled, plumper sections.

Profiting by last year's fortunate experience, my preparations for the heather campaign are principally along the line of shallow brood nests. A strong colony on nine shallow frames and supered with two racks of combed sections can be relied on to make a good show at the moors. Heather honey should fetch a fancy price this season, as the clover crop is bound to be a light one. I am getting 12s. the dozen for clover sections, and intend maintaining that price for the best quality.

Heather honey may fetch anything up to double that figure.—J. M. Ellis, Ussie Valley.

THE HEATHER HONEY QUESTION.

[8503] Regarding Mr. Bullamore's letter (page 283) in last week's Bee Journal, may I quote a few words from Professor Henslow's "Poisonous Plants in Field and Garden," in which you will find some part or species of plants which are poisonous and which include almost every natural order in Britain, including *Leguminosæ*. "*Ericaceæ*. This is a large family, and divided into tribes by botanists. One supplies the bilberry, whortleberry, and cranberry, which bear edible fruit. Another includes heaths and ling; but the only one that calls for attention is that which contains the common garden rhododendrons and azaleas."

I am sure there are many bee-keepers on the Pennine Chain and elsewhere whose bees exist mostly on nectar gathered from the *Ericaceæ* family, and though the strength of the hives might not be to the satisfaction of some bee-keepers, they are British, and, like the dalesman, they exist where others would fail.

There may be several of the rhododendrons and azaleas that exude nectar of a poisonous nature, but as the flowers are visited almost exclusively by the humble bee I think we need not be afraid of our little workers doing any harm, especially as most of these poisonous shrubs are natives of hotter climates than

ours, and the warmer the climate the more strongly developed are the vegetable poisons.—A Regular Reader, Leeds.

[8504] Mr. G. W. Bullamore (page 283) is very unfortunate in quoting Keys and Huish as authorities on this subject, as neither had anything to do with heather honey, and the amount of value to be placed on what either writer says can be judged from what they write about other matters.

Keys, in his last book, published in 1814, respecting Schirach's discovery that bees could rear a new queen from worker eggs if their queen was taken away, says he "experimented according to his directions, with the most scrupulous exactness and care for eight years, but without a *single result* in confirmation of his scheme. In this pursuit many bees and many stocks were unavoidably ruined, besides an accumulation of vexation and trouble."

Huish pads his book with everything he can gather, and gives as a discovery *of his own* (see chap. xxi.) the theory "that if a hive dies and you put it in a dry cool place till July, and then set it out on a stand, it will come to life again and make a flourishing stock." Such "authorities" as these had best be left alone. Quoting them reflects no credit on the quoter.

I have had experience of wintering bees on heather honey for forty years, and I could satisfy a jury either that it is the best or the worst food.

The late Mr. Abbott used to say that when a queen ceased to lay it was a hard matter to start her again until she had had a rest, and in this fact lies the secret. If you take a stock of bees to the heather with a queen which has been laying hard all summer the bees are all worn out, and there are no young ones reared to take their place, consequently that stock will either die before spring or be ruined; whilst if a young queen just starting to lay is taken, when the heather-flow ceases the hive is teeming with young bees and there is a large patch of brood, which means empty cells for wintering in, which condition will be lacking with an old queen. Such a stock will winter as well as any, no matter what the stores may be. If we bear these facts in mind when considering the value of heather honey as winter food, we will understand it better. —J. Rose, Sheffield.

HONEY-GATHERING FROM VETCHES.

[8505] The vetch secretes honey at a gland below the flower-stalk, just on the further side of a leaf barrier. Its office is to keep ants from going further up the stalk and robbing the blossom. The bees described in a query in "B.B.J." of July 11th (page 278) seem to have discovered the ants' bribe, a piece of intelligence rather beyond the general run of the hive-bee's capacity in the open field.—G. G. Desmond, Camberwell.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

A Little Knowledge.—Yes, it is a dangerous thing! It seems that "over there" they use disjointed hives which allow robber bees to play havoc with the stores of the genuine inhabitants, and one of the editors of *The American B.J.* (page 198) advises owners of such hives to plaster the cracks with clay mixed with water. I would have made no "extract," but that a sentence is added, "Our European brethers use a mixture of cowdung, clay, and ashes to make a cheap cement." I read such a sentence in a bee-book printed in 1609! That is my only comment.

"*Boiling Down.*"—The *Review* and *American B.J.* both deal with the contributions of correspondents who are too prolix in the treatment of their subject. This sin is a common one, and writers to bee newspapers are guilty. Many of them "beat about the bush" unduly and make too lengthy an introduction, this frequently occupying from one-third to one-half of the matter. As a rule it is best to plunge into the subject right off. Where, however, I think very many writers err is *want of method* in arranging the plan of the article before it is consigned to paper. There should be a definite consecutive set of "pegs" on which to hang the successive steps in the reasoning in order that the reader can profitably follow the end in view, advancing step by step to the desired end.

Avoiding Stings.—The *Australian B.K.* notes that when grass or weeds are pulled up with the bare hands before opening a hive, the bees go for these hands vigorously. The writer says he finds it best to handle bees with *dry* hands, as free of scent as possible. He believes, however, in "blowing a little smoke on the hands before manipulating." The *Canadian* gives a sting cure: "Carbolic acid in crystals 1 dram, glycerine 4 drams, distilled water 1 dram. Dissolve the acid by the aid of a little heat. Two or three drops of the preparation should be placed on a little cotton-wool, which, if possible, should be tied over the wound to keep the air away."

An Open Mind.—We have recently received one or two rude shocks in regard to our previously accepted notions of the cause of foul brood. The virulent form is now pretty generally set down to the presence of *Bacillus larvæ*, or the equivalent terms used by certain scientists. Now comes Dr. White in his latest bulletin,

kindly forwarded to me, absolutely stating that although *alvei* is present in the milder form it is not the inciting cause. From the earliest inception of the disease another form, *Bacillus pluton*, manifests its presence, and it abides right on to the end. As the disease develops *alvei* appears, and sometimes *Streptococcus Apis*. Dr. White, wisely, has decided to retraverse the whole ground before definitely claiming that *pluton* is the arch transgressor.

Selling the Crop.—Very many bee-keepers wait until all their honey is off the hives before trying to dispose of the crop. This is a grave mistake, as then there is too much of a rush, with the result that the market gets over-stocked. Mr. Tyrrell, in an editorial, advises his readers wisely that "*now* when the surplus is piling up in the hives is a good time to think where and how the honey is to be sold. The bee-keeper who fails to sell his crop lacks something necessary to obtain full success."

Grading Sections.—The *Review* illustrates three grades—Fancy, No. 1, and No. 2. In this country we generally, after laying aside show sections, group all ours as 1st Grade, every section of which would be fit for sale at the highest market price. 2nd Grade might be disposed of at a smaller price, but we would rarely, if ever, try to sell any lower grade such as is shown in "No. 2," the American 3rd Grade. It is a grave mistake to slip in any low grade in a consignment of really good sections.

Car-loads of Bees.—Our cousins are enterprising, and one of their latest feats is to transport whole car-loads of bees over a railway journey of 1,000 miles. This has repeatedly been accomplished recently, and that, too, in a temperature varying from 100deg. in the shade down to freezing point. The feat is a notable one.

Excelsior!—On page 406 of *Gleanings* appears an illustration of eleven hives that produced 1,320lb. of milkweed honey in *eleven days!* On seeing the taking picture and reading the letterpress I almost wished I were in Michigan—away from the poisonous honey I am informed I have been eating, and enjoying, all my life—but my feelings got a check when I turned to page 408 and found another eleven hives "tipped off by accident," lying ignominiously on the ground. No wonder it describes transporting hives as a nerve-racking operation.

Colour of Bee-Flowers.—Prof. Lovell has lately been contributing a series of articles to *Gleanings* on this subject. Somewhat to my surprise he finds green the predominant colour—the figures being green 1,244, white 956, yellow 801, red 260, purple 434, and blue 325; a total of 4,020. Of the green he writes: "Though there are many exceptions, this group usually have regular or wheel-shaped or cup-shaped flowers with the nectar easily accessible, and are visited by all flower-loving insects."

BRIEF REPORTS OF THE HONEY SEASON.

I notice in the BRITISH BEE JOURNAL that you will be pleased to receive reports, and I append a short account of the honey-flow in Lee and district, which I hope may be of interest. Owing to the exceptionally mild weather during the early part of the year, stocks were ready for supering by the third week in April. The honey-flow was then more or less continuous until the chesnut and hawthorn had finished blooming. This was during the fourth week of May. (My best stock yielded 37lb. surplus from this flow, but in addition the bees built out two racks of sections fitted with half sheets of foundation.) Nectar then became very scarce until June 25th, to such an extent that the advantage of early swarming was lost if feeding was not resorted to, the bees in the mother colony refusing to let the young queen lay much. In some cases the young queen did not lay at all until a month after hatching. On June 25th the hives commenced to yield nectar in appreciable quantities. Owing to the heavy rains in June, nectar was secreted in great abundance; blossom was also very plentiful. The flow lasted until the middle of the second week of July. During its continuance my best colony gave me 62lb. This finished the honey season for this district, except for a flow from a marmalade factory somewhere in the vicinity, which we would rather do without.—E. F. LEDGER, Lee, S.E.

The latter part of April and the whole of May were very favourable, and bees gathered a large supply of fruit and other tree honey. June was practically a blank. July up to the 18th was very good indeed, and bees worked hard to make up for June. Yield: about 60lb. per hive. Magnificent show of white clover, which is just beginning to wane.—C. H. P., Wrea Green, Lancs.

So far this year has proved a disappointing season for honey. I have taken off 280lb. from twenty-two hives and, given favourable weather, may get another 500lb. or 600lb. Last year I took 1,200lb. odd from only nineteen stocks. The season has been favourable for swarms.—E. H. O., Stanford Rectory, Worcester.

The season in North-East Hants bids fair to be an average one with honey of good quality. Many swarms in some places.—F. D. HILLS, Alton.

The season in this district has been an average one. We had four splendid days, July 14th to July 17th, which saved the situation. Bees did well in May, but June was a failure; honey gathered in July is of good quality, chiefly from clover and limes. Average nearly 40lb. per hive, without swarms.—T. H., Uttoxeter, Staffs.

Queries and Replies.

[8492] *Sending Queens to Australia.*—I should be glad if you could give me through the "B.B.J." the best method of sending queens to Australia. Would it answer if I had a box made to take three shallow frames with a perforated zinc division between each one? I should have the frames three-parts full of honey and about 150 to 200 bees with each queen, and with ventilation top and bottom. And would it be best to send them by post or through the shipping agents? A reply in next week's JOURNAL would oblige.—A. F. K., Truro.

REPLY.—Mr. F. W. L. Sladen has kindly given his method of sending queens. He writes as follows:— Each queen should be sent in a separate box containing about seventy young bees. A suitable size for the box is 3½in. deep, 3¾in. wide, and 4½in. long, inside dimensions. Such a box should be fitted with two frames made of thin wood, each frame measuring inside 2½in. by 3in., containing a piece of tough old comb full of sealed honey cut to fit it tightly, and held in with waxed string. It is important that the bees should have abundant room to crawl around and between the combs. If this is supplied, sufficient ventilation is got by making saw kerfs in the side walls of the box. Perforated zinc is not a suitable material for providing ventilation because poisonous salts sometimes form on the surface of this metal. The wood used for making the boxes and frames should be non-resinous. Send by post *via* Italy. Benton mailing-cages of larger size than usual, containing about twenty bees, may be as successful as the boxes of comb if great care is taken in making the candy and selecting the bees.

[8493] *Condition of Stock after Swarming.*—About two months ago I purchased a hive of bees, which swarmed a month later. I secured them in a small cottager's hive, and when the week following a cast came off I united them to the first swarm. They have almost sealed over a rack of sections, so that I put another super below, and they are working well and are very strong. I should like to know what I can do to improve the old stock. The bees are not so vigorous, and have never touched a section since swarming. There were 10 frames, but built so irregularly that I could not work them without damaging comb. I took two of the worst frames out, and as there is practically no brood I am trying to run the sealed honey off. I put three new frames in, and they are now drawn out and half filled with honey. It is three weeks since the last swarm issued, and I have never noticed eggs until to-day. These are very irregular, laid in patches. There are a large number of drones and a queen-cell, which has hatched since last I examined the stock (a week ago). There are eleven frames not very well covered, being mostly filled with sealed honey and pollen. Ought I to take some of the old frames out and replace with fresh foundation? (1) Do you think the queen is just commencing to lay, or do the indications point to a fertile worker? (2) Will the sealed honey (dark coloured) do for feeding during winter, and should I let it remain in the hive? (3) As the workers have not been very vigorous lately is it likely they were left queenless and provided a queen themselves?—D. I. R., Dereham.

REPLY.—As the stock has thrown both a swarm and a cast it is utterly impossible for it to give you surplus also. Remove the super. You can weed out the old combs gradually and give new frames fitted with full sheets of worker foundations for the bees to build out. (1) The queen is just beginning to lay. (2) You can use the honey for feeding in the autumn if required, but boil it before giving to the bees. (3) The slackness is due to the hive being populated with young bees only.

[8494] *Drone v. Worker Comb for Surplus Storing.—Queen Mating.*—(1) I notice that if drone and worker combs or foundation are put in the same super (shallow frames) the bees fill the worker combs first. How is this? Also if the super contained worker comb only is it likely I should get more honey? (2) When a new queen is hatched how long is it before she starts to lay? I understand that she can lay before being fertilized, but if she does the result is drones. Is this so? (3) When a stock swarms do the bees always leave one or more queen-cells started, and are they sealed over before the swarm leaves? If so, am I right in supposing that the new queen would hatch out in five or six days' time.—TRYER, Long Eaton.

REPLY.—It is merely a coincidence. We have had exactly the opposite experience. One usually gets more honey in drone than in worker-cells. (2) Much depends upon the weather. Usually the queen leaves the hive for mating when five days old. This period is sometimes prolonged by bad

weather. She commences to lay about thirty-six hours after mating. Should she commence to lay without mating she will be useless, as she will afterwards lay infertile eggs only, which produce drones. (3) When a swarm leaves there is usually a princess due to emerge in about three days' time.

Bee Shows to Come.

August 1, at Taunton.—The Somerset Bee-Keepers' Association's Annual Show, in connection with the Taunton Horticultural and Floricultural Society. Classes for Appliances, Honey, Wax, and Bee Products. Many Open Classes. For schedules, &c., apply to R. A. Goodman, 3, Hammet-street, Taunton. **Entries close July 27th.**

August 1st to 5th, at Preston.—Annual Show of the Royal Lancashire Agricultural Society. Honey and Bee Appliance Section. **Entries closed.**

August 5th, at Melton Constable.—The Annual Show of Bee Produce of the North Norfolk B.K.A. will be held in connection with the Melton Constable Horticultural Society. Schedules from Hon. Sec., D. Wardleworth, Sheringham, Norfolk. **Entries close July 29th.**

August 5th (Bank Holiday), at Cambridge. Honey Show in connection with the Cambridge Town and County Mammoth Show Society. All open classes. Silver and bronze medals of the B.B.K.A. to be competed for; also another silver medal and three special hives. This show also includes dogs, poultry, pigeons, rabbits, cage birds, flowers, fruit and vegetables; also grand programme of sports and motor racing, &c. Balloon ascent and double parachute descent by Captain and Miss Spencer. Special engagement of the Black Dyke Band. Mr. W. Herrod, F.E.S., expert to the British B.K.A., will lecture and demonstrate in the bee and honey department during the day. Schedules for bees, honey, and horticulture from Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge-street, Cambridge. **Entries close Thursday, August 1st.**

August 7th, at Blythe Bridge. — Blythe Bridge Horticultural Society. Section for Bees, Honey, and Wax. Open classes. Schedules from Chas. Beeston Blythe Bridge, Stoke-on-Trent.

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester. **Entries close August 3rd.**

August 14th, at Wye, Kent.—11th Annual Exhibition in connection with the Wye Grand Horticultural Show. Classes to suit all Bee-keepers, great and small; two 5gs., one 6gs., one 2gs. cups in different classes. Various classes open to Kent, Surrey, Sussex, and United Kingdom. Splendid prizes and low entrance fees. Send for schedules to Mr. Alfred Lepper, Secretary, Kent Honey Show, Wye, Ashford, Kent. Note.—Schedules will be sent to competitors of 1911 without application. **Entries close August 5th.**

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 22nd, at Abington Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 28th, at Chester.—The Cheshire Bee-keepers' Association will hold a Honey Show, in conjunction with the Cheshire Agricultural Society. Good classes and prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

Notices to Correspondents.

E. T. M. (Belvedere).—*Quality of Beeswax.*—The sample is a poor one, devoid of aroma, badly rendered, greasy, and appears to contain some substance that has made it soft. An analytical chemist only can give an analysis, as it is too intricate an operation, but you can test it for yourself by any of the tests given on pages 95 to 97 of "Wax-craft," which would enable you to form some idea of its composition.

T. W. P. (Wood Green).—*Dealing with Diseased Stocks.*—(1) Destroy the bees by means of sulphur fumes; afterwards burn combs, quilts, bees, &c. (2) Yes, the honey in super is quite fit for human consumption, but be careful that no bees have access to it. (3) The hive can be used again with safety, if disinfected by scorching thoroughly. (4) No, we think not.

Nemo (Beccles).—*Driving Bees from a Box.*—A better plan than driving the bees will be to search on the lower combs from time to time for the queen. When she is found, put the excluder in position as you suggest. After about three weeks have elapsed clear the box (wine case) by means of the "Porter" escape, and remove it.

W. F. P. (Dursley).—*Race of Bees.*—The bees are hybrid Ligurians.

J. H. (Penn).—*Sealed Queen-cells Found Empty.*—Bees will often seal up queen-cells after they have been vacated by the newly-hatched virgins. Had you waited another week or ten days, the young queen would have commenced to lay.

J. E. J. (Pontardulais).—*Several Eggs in one Cell.*—We do not think, under the circumstances, that it is a case of a fertile worker. The queen is accepted, which indicates that she is the mother in the hive. Very prolific queens will occasionally deposit more than one egg in a cell. All but one of these are usually eaten by the bees.

E. J. W. (Street).—*Brood Diseases in Europe and America.*—We do not recognise the name "European Foul Brood" in this country. It is an American term.

Curious (Cumberland).—*Queen Cast Out.*—The queen is a virgin.

A. M. (Bulpham).—*Selling Honey in Jars.*—The usual practice is for the price to include the jars, whether selling wholesale or retail. In some cases 1d. per jar is refunded to the customer who returns them when empty in good condition.

E. B. (Birmingham).—*Race of Bees.*—They are ordinary English bees.

J. H. M. (Fulham).—*Swarm Refusing to Settle when Hived.*—It is impossible to account for the behaviour of the bees, but we have known them act in this way occasionally.

Suspected Disease.

D. J. (Congleton).—The comb is badly affected with foul brood.

A. Learner (Stourbridge).—It is odourless foul brood. Use Apicure, and it will disappear.

R. S. S. (Newcastle-under-Lyme) and Alpine (Leicester).—There is every appearance of "Isle of Wight" disease about the bees sent.

Honey Samples.

W. H. B. (High Legh).—We have never heard of a "Medium Dark Honey." It must be a printer's error in the schedule. Your sample is a light honey, and is too thin for the show-bench.

A. W. (Higham Ferrers).—The sample is a light-coloured honey, density and aroma good, flavour fair. It is worth 10d. per lb. retail.

W. B. A. (Parson Drove).—No. 1 is a light honey, gathered partly from mustard. Flavour, density, and colour are all good. This sample is the best of the three, No. 2 being rather thin, but of good flavour and nice light colour. No. 3 is not a dark, but a medium-coloured honey; flavour is good, but it is very thin.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ¼in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

GOOD 4-frame Nucleus, 12s. each; also Hives. —WILLETT, JUN., New Malden, Surrey. v 319

PURE CAMBRIDGESHIRE HONEY, chiefly sainfoin, light amber colour, 60s. cwt. on rail, tins returnable; sample, 2d.—J. CUNNINGHAM, Stetchworth, near Newmarket, Cambs. v 318

FIVE spare lots of Driven Bees (1912 Queens), first week in August, 4s. per lot, boxes returnable. — THOMPSON, Beekeeper, Gowdall, Snaith, Yorkshire. v 327

GOOD new Sections, 9s. dozen; best Extracted Honey, same price.—MEPHAM, Orlestone, Ham Street, Kent. v 316

NEW light Extracted, 56s. cwt.; sample, 3d.; healthy Stocks, in Skeps, swarmed 1912, plenty stores, 15s.—STEED, Fennes Lodge, Braintree. v 308

SIX-FRAME Observatory Hive, mahogany, double glass, first-class make; particulars.—TUCKER, 85 Loughborough Park, S.W. v 309

OFFERS WANTED for three strong Stocks, in good hives, with section racks.—PRIESTMAN, 247, Bloomsbury-street, Birmingham. v 311

FOUR-FRAME NUCLEUS, with 1912 Queen, guaranteed healthy, 10s. 6d.; 6-frame, 15s. 6d.; large natural Swarm, 10s. 6d.—WEBB, 61, Alcester-road, Moseley, Birmingham. v 313

PURE light Clover Honey, in 56lb. tins, packed, f.o.r., £3 per cwt.—R. MANLEY, Towcester. v 314

FINEST light Scotch Clover Honey, £3 cwt.; sample, 2d.—T. RULE, Summervale, Annan, Dumfries-shire. v 315

QUOTATIONS WANTED for 5 cwt. Pure English Honey.—W. C. BROWN, pharmacist, Bearwood, Birmingham. v 312

FOR SALE owing to ill-health, Twelve Stocks of Bees, in frame Hives; also Appliances.—C. H. HAYNES, Hanley Castle, Worcester. v 317

DISPOSAL, complete Apiary, Hives, Appliances, from 5s.; exchange.—Particulars, HORTON, Bridge, Flixton, Manchester. v 322

Editorial, Notices, &c.

DISEASES OF BEES LEGISLATION.

On Friday, the 26th ult., in the House of Commons, Mr. Runciman, President of the Board of Agriculture and Fisheries, introduced a Bill, which was read the first time, to provide for the prevention of the introduction and spread of pests and diseases affecting bees. The text of the Bill is as follows:—

A BILL

TO PROVIDE FOR THE PREVENTION OF THE INTRODUCTION AND SPREAD OF PESTS AND DISEASES AFFECTING BEES.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1.—The Board of Agriculture and Fisheries (hereinafter referred to as the "Board") may make such orders as they think expedient for preventing the introduction into England and Wales of any pest or disease affecting bees, and for that purpose any such order may prohibit and regulate the introduction or admission by post of bees, and of any articles or appliances used in connection with bee-keeping, and any other thing whereby any such pest or disease may be introduced, and any such order may direct or authorise the seizure, detention, destruction, or disposal of any bees or things introduced or admitted in contravention of any such order.

2.—The Board may make such orders as they think expedient for preventing the spread in England and Wales of any pest or disease affecting bees, and any such order may direct or authorise the destruction by the local authority of any colony of bees so affected, and any receptacle (other than a movable comb hive) in which there are or have been so affected bees, and the contents of any receptacle which is being used or has recently been used for bees so affected, and may authorise the destruction by the local authority, subject to payment by way of compensation of the value of the thing destroyed, of bees, or any other thing, which, in the opinion of the local authority, may spread a pest or disease affecting bees, or is liable to become infected by any such pest or disease, such value to be determined in manner prescribed by the order.

3.—(1) An order under this Act may impose fines recoverable on summary conviction for offences against the order, not exceeding *ten pounds* for any one offence.

(2) An order under this Act may direct or authorise the local authority or any committee thereof to which the powers of the authority under this Act may have been delegated, to carry into effect and enforce the order within the district of the local authority, and if a local authority or committee, when so required by any such order, fails to carry into effect the order or any provisions thereof, the Board shall have all such powers of executing and enforcing the order, or procuring the execution and enforcement thereof, and of recovering expenses incurred, as are conferred on the Board by section thirty-four of the Diseases of Animals Act, 1894, with respect to an order made under that Act.

(3) In any proceedings under this Act, no proof shall be required of the appointment or handwriting of an inspector or other officer of the Board or of the clerk or an inspector or other officer of a local authority.

4.—(1) The local authorities under the Diseases of Animals Act, 1894, shall be the local authorities for the purposes of this Act, and any expenses incurred by a local authority under this Act shall be defrayed as expenses incurred under that Act.

(2) Every local authority shall appoint so many inspectors and other officers as the local authority think necessary for the execution and enforcement of orders under this Act, and shall assign to those inspectors and officers such duties and salaries or allowances, and may delegate to any of them such authorities and discretion as to the local authority may seem fit, and may at any time revoke any appointment so made.

(3) Every local authority and their inspectors and officers shall send and give to the Board such notices, reports, returns, and information as the Board require.

5.—(1) An inspector of the Board or of the local authority may at any time, accompanied if he thinks fit by an expert adviser, enter any building or place wherein he has reasonable ground for supposing that there are or have recently been bees affected by any pest or disease, or that any order under this Act has not been or is not being complied with, and to examine any bees on such premises and anything thereon used for or in connection with bees:

Provided that the powers of an inspector of a local authority shall not extend outside the district of the local authority.

(2) If any person without lawful authority or excuse (proof whereof shall lie on him) refuses to any inspector or other officer acting in the execution of this Act or of an order under this Act admission to any building or place which the inspector or officer is entitled to enter or examine, or obstructs or impedes him

in so entering or examining, or otherwise in any respect obstructs or impedes an inspector or other officer in the execution of his duty, or assists in any such obstructing or impeding, he shall be guilty of an offence against this Act and shall be liable on summary conviction to a fine not exceeding *ten pounds*.

6.—This Act shall apply to Scotland in like manner as it applies to England and Wales, subject, however, to this modification, namely, that the powers conferred on the Board of Agriculture and Fisheries shall in Scotland be exerciseable by the Board of Agriculture for Scotland, and that for the purposes of sub-section (2) of section three of this Act the Board of Agriculture for Scotland shall have the like powers as are conferred on the Board of Agriculture and Fisheries by section thirty-four of the Diseases of Animals Act, 1894, with respect to orders under that Act.

7.—This Act may be cited as the Bee Disease Act, 1912.

REVIEW.

Indoor Gardens, by T. W. Sanders, F.L.S. (London Agricultural and Horticultural Association. Price 1d.).—Like all the works of its popular author, this book is brightly written, yet practical and crammed full of useful information. The lists which Mr. Sanders gives of plants which can be successfully grown indoors will be a surprise and pleasant revelation to many. But his facts may be fully relied upon, and success will certainly be achieved by those who intelligently follow his instructions. The booklet is No. 40 of the One & All series of penny popular garden books which have now attained an annual circulation of over a million-and-a-half copies. It is, like others of the series, fully illustrated throughout.

AMONG THE BEES.

By D. M. Macdonald, Banff.

BEES AT THE HEATHER.

"This floure of purpule hue, as sweet as huny and beloved of the bees," as a writer of 1500 described it, is as highly appreciated at the present date as ever before, and by all bee-keepers who live within reach of its bloom it is recognised as the king of bee-flowers. Fortunately, over vast stretches of hill and dale it is found in lavish profusion, and the wealth of its blossom makes the purple hills during August a vision of delight. For scores of miles there is one ocean of heather, stretching for leagues and leagues, in an unbroken sea of purple, and every yard of it scented like a honey-comb.

In a few days thousands of bee-keepers, with tens of thousands of hives, resort to this El Dorado. All sorts and conditions of men transport their hives to the moors for a distance, it may be, of from five to fifty miles. Every description of hive is carried there, from the rudest form of "ruskie" to the most advanced modern frame-hive. And the means of transport are as infinite, every sort of vehicle being requisitioned, from the humble farm "machine" to the stylish motor-car, flying to the uplands at the rate of thirty miles an hour!

In many parts of Central Scotland this annual event is made an occasion of high festivity, a kind of yearly pilgrimage, and scores of bee-keepers from every village and "clachan" unite to celebrate the occasion. Mere ordinary work is suspended by midday, and every man, woman, and child is expected to lend a hand in packing, in order that the cavalcade may start as soon as the cool of the evening allows the "port-holes" of every hive to be closed. The system of packing is as various as are the infinite styles of hive. Where combination has been perfected, hives are more nearly alike, and generally, large vehicles are employed carrying thirty or more hives. In other cases, however, the humble gig, the light spring brake, and even the lowly hand-barrow may be seen laden with from one to half-a-dozen. Bicycles, motor-cycles, and motor-lorries have become quite common means of transport within the last three years. The speed attained by this newest means of transit must count largely in its favour, where it is possibly available, while the smooth going will save any upset, and if one should occur no horses are there to get stung. The transit of hives to and from the heather has, however, for a generation been made so much of a high art that accidents are never reckoned on. Everything is made as taut as possible before the start is made, the village patriarch showing *how* out of the fruits of a ripe experience.

Planted down as these colonies of bees are in the very centre of the heather bloom, their work, other things being favourable, must be attended by the best results. Down on the plains the indefatigable workers have had to forage free and far to secure surplus takes of honey, but here the nectar is at their very doors, and the bloom is so dense and compact that each bee is able to load up in an area of only a foot or two from start to finish. A sheltered, dry site is chosen some time in advance, and as soon as the array of vehicles arrive on the dumping ground all is hurry and bustle,

until every hive is consigned to the chosen stand. An early breakfast is partaken of by the bee-keepers, while the bees are allowed to settle down a bit before entrances are opened. Shaken up and confused as the bees have been during the last few hours, they instinctively note the new location on issuing in this strange land. But, tempted as they are by the strong odour of that wealth of bloom, the securing of the rich stores of nectar completely engrosses their thoughts, and they settle down as contentedly as if that bare stretch of moorland had been their home from the first of time.

All being well with the busy little workers, their owners now wind their separate ways homewards, having thoroughly enjoyed their annual outing. As models of genial, whole-hearted, merry-makers, commend me to a body of hilarious bee-keepers having a holiday among the bees out on the heather hills on some glorious day of early August. Life, on such an occasion, is "worth living." It is a mistake to suppose that only a few very strong stocks are taken to the hills by each bee-keeper. While these are the ones worth taking if surplus is the one desired object, the number carried there to secure provision for winter keep may, in many instances, number three to one. I know of "advanced" bee-keepers who send all their late swarms and casts to out-apiaries, where heather is plentiful. Coming off in mid or late July, if left at home they would die out, because the flow is nearly over, but forwarded as swarms to the moors, they may have nearly two months to establish themselves as stocks for next season's work. Suggest to any of these bee-keepers that such winter stores are a slow poison to the bees, or that they will die out with only such food to live on, and they will laugh you to scorn; as they have learned from the experience of years that the "theory" is contemptible nonsense!

For surplus takes every colony transported to the heather should be as strong as a stock can be. All should be what I like to describe as at the "boiling point." If they are not in that condition, then make them so, by adding bees or frames of brood and bees, or by uniting two medium stocks. The ideal is to have all hives with only a limited number of frames crammed with hatching-brood, and strong in bees almost to overflowing. Give ample surplus room with full sheets of foundation in every section, or where possible built-out combs. Wrap supers warmly up. With these points attended to it is marvellous how quickly powerful colonies can fill up surplus chambers to make the heart of their owner rejoice when the happy time comes for fetching home the heavily laden hives. May "fat" supers be the experience of all heather men in this year of grace! Never mind what the uninitiated say of the quality of the nectar. *We know.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8506] We in the South are now at the end of our honey season, and I am sorry to have to record that only about half a crop has been secured compared with last year, while the quality is not so fine as in 1911. The long time taken in filling sections in a measure did not conduce to extra fine quality, as in some cases they were in the hives from May till July, while in some of the grand old seasons of the 'eighties we had them filled, sealed, and off the hives in seven or eight days.

Mr. Kidd (8496), page 284, is hoping to interest bee-keepers in producing a hybrid red clover, if such is possible. A few years ago we were led to hope that bees with longer tongues which could gather the nectar from "red clover" would in a few years be produced, and our American cousins were endeavouring to propagate a red clover with short tubes to the flowers. But we hear nothing of these smaller flowers or tongues now, and if there is so little difference between the "bee in amber" and the bee of the twentieth century, I fear there is not much hope of our being successful in cultivating a cross with the white and red clover. (I have heard it stated that alsike was a cross between white and red clover.) Perhaps Mr. Hayes can tell us if the pollen grains are similar, or if it is possible to fertilize the flowers of one plant with the pollen from the other clover plant.

D. M. M., page 296, in commenting on Dr. White's latest bulletin says after some twenty-eight years Professor Cheshire's *Bacillus alvei*, which has been considered by most bee-keepers to be the cause of foul brood, though some of us have contended that it may have been the result and not the cause, now we have a new *bacillus* discovered as *the cause*. Have more powerful instruments been brought to bear on the work, or has this new bacillus introduced itself into the denizens of the hive? Was it a new, unknown bacillus before Dr. White found it

in the dead brood of bees? Fuller information will be interesting, as well as instructive. I trust that Dr. White will discover a remedy that will kill the bacillus, and not the bee. Then we shall have hopes of a healthy race of bees, such as was generally found in cottage gardens before the advent of foreign bees and modern bee-keeping.

I am very sorry to see in "Notices to Correspondents" accounts of the spread of "Isle of Wight" disease. It would be interesting, if possible, to know how these cases, so very wide apart, can be accounted for, and how the disease is being spread. I have had private correspondence on the matter with bee-keepers of experience, and they think it may be that selling swarms and queens is the means of spreading the disease. If so, it is a dastardly trade that should be nipped in the bud. If no possible source of infection has been found in these new outbreaks, man is powerless to prevent its spreading.—W. Woodley, Beedon, Newbury.

1912 SWARMING.

"A swarm in July
Is not worth a fly."

[8507] The old and familiar rhyme is puzzling to the layman, but full of truth to the British bee-keeper. The July swarm is looked upon as a nuisance—nobody expects it, nobody welcomes it, nobody buys it. It is considered exceptional, one might almost say unnatural, and usually requires artificial food to enable it to live through the winter.

Were the words of the rhyme literally and always true, however, there would be many worthless stocks in our gardens today, for the month of July has been characterised by an epidemic of swarming.

April and May were delightful bee months, stocks developed fast, and honey came in steadily. "Swarms in May," however, worth "Loads of hay," or, more prosaically, "Three shillings a pound," were rather scarce, and commanded high prices. Then came June—dreary, wet, and cold. The bees, confined to their hives, had nothing to do but to convert their May accumulated stores into brood, and this they did with such right good will that swarms hived at the beginning of July soon had as much honey as those hived in the middle of May.

The confinement of the bees to their hives in June not only resulted in an abnormal expansion of the brood-nests, at the expense of the stores, but it also diminished the wastage due to worn-out foragers, so that at the end of the month stocks were unusually strong.

The 22nd June was a wonderfully close and hot day, and with it came a welcome inflow of honey. This day undoubtedly encouraged many stocks to swarm, for although it was succeeded by a further spell of wet weather, sure enough from nine to sixteen days later swarms were reported from all parts of the country. Some were delayed by the weather till the young queens hatched. Perhaps the most remarkable thing about some of these swarms was their prodigious size. I have always prided myself on cultivating "non-swarming" bees, and have not had a swarm for six years, but on July 4th two of my hives swarmed at the same time, and joined together on a neighbour's apple-tree. They not only filled completely a large skep, but there were almost as many outside when they were removed, and they weighed fully 14½lb. This was the largest swarm I have ever seen, and I venture to think it was a record for 1912. I returned them all to one of the parent hives after removing the queen-cells, so that the population of that hive must have been about 100,000 bees—truly a mighty colony! They have since filled sixty sections, and are still going strong.

On the next day Mr. T. W. Cowan had a double swarm, which weighed over 12lb., and Mr. Bigg-Wither, of Wells, had a single one of 10lb.

A curious case of continued swarming has recently come under my notice. A lady began bee-keeping with a 4lb. cast, hived on the 26th of May, on eight sheets of foundation. As the queen was not fertile a week later two frames of brood were given to the stock. By June 28th the queen had filled every available cell with brood, and the bees began a rack of sections. On July 12th a 5lb. swarm issued from the hive, and as the honey season was considered at an end it was not returned, but placed in a new hive on six sheets of foundation and one frame of brood.

The next day, the 14th, was very hot, and a splendid honey day, and, strange to say, the bees of this last swarm must have made up *their* minds to give off a swarm, for this issued on the 19th, leaving three frames of bees, an abundance of eggs, and four queen-cells, some of which contained larvæ, apparently two days old. This small stock was given a frame of brood and a ripe queen-cell, and will doubtless soon become a vigorous stock.

I need hardly say, perhaps, that the queens which have played these "pranks" and their relatives will be dethroned before the winter.

The two main factors which cause a prosperous colony to swarm are a rise in temperature and an influx of honey. Probably neither of these factors alone is able to cause the decision to swarm to be made, for we often get higher tempera-

tures in August than in May, and July, the best honey month, is usually swarmless. It is when a sudden rise of temperature is attended by a marked, although perhaps temporary, increase in the honey-flow that the swarming instinct becomes roused. Once queen-cells are begun, no variations in the honey-flow will cause the bees to abandon their intention, provided, of course, that they have stores, but a prolonged lowering of the temperature sometimes prompts them to break down their royal cells, with the result that they do not swarm at all unless the coincident conditions of high temperature and increasing honey-flow recur. The combination of these necessary conditions for swarming can generally be prevented by allowing plenty of bottom ventilation, and this is doubtless the most effective method of keeping the bees at home.—S., Somerset.

A HOME-MADE HEATHER HONEY PRESS.

[8508] Now that the heather honey season is approaching it may interest some "B.B.J." readers to learn about my home-made heather honey press, which I made and used very successfully after the heather honey season last year. The press consists of a box without top or bottom, made of ¾in. spruce boards. The internal measurements are: length, 19in.; width, 9in.; and depth, 10in.

One end is a plain piece of board with a 2in. hole cut through a little above the centre. The board at the other end of the box is only 6in. in depth, and is surmounted by a wooden lever, which hinges on a screw at one end and may be clamped and firmly fixed by a shorter lever at the other. Half-way along the under side of the longer lever four headless nails are inserted ½in. apart and allowed to protrude ¼in. Other requirements are: (1) A stick or rod 20in. by ¾in. by 1½in., tapering off to 1in. at the ends, after leaving the 4in. in the middle 1½in. in thickness. (2) A piece of good strainer cloth, measuring 12in. by 24in., and having a slit 2½in. long cut through at one end and running in the direction of the length of the material. This slit should be bound round with tape. (3) A receptacle for the honey. For this I cut the side out of a 56lb. honey tin, and made the box just large enough to fit on to it when the sides were crushed in a little.

Now for the method of using. Cut the comb from a shallow frame and divide it longitudinally, place one piece on top of the other and lift both on to the piece of strainer cloth. Fold the edges of the cloth as if making the comb into a parcel, but leave the ends free. The end without the slit is placed under the long lever and held firmly by the four headless nails, already mentioned. The end having the slit is passed through the 2in. hole in the opposite end of the box. The stick is passed through the slit and then this end of the cloth is wrapped round with a piece of tape to prevent it from tearing and to cause the strain to be equally distributed. Then the stick is rotated. Enormous pressure can be obtained in this way with very little effort, and the honey is expressed more rapidly than by many of the expensive machines which are sold for the purpose.

The strainer cloth is the kind used in dairies for collecting and pressing curds when cheese-making, and costs about ½d. per yard.—S. R. P. Fisher, Preston.

WASTED NECTAR IN RED CLOVER.

[8509] Referring to letter from A. D., Willesden (page 295), I was thinking more of the clovers, which are sown in rotation of crops. There is a large field near my apiary, and the farmer has shown me some new varieties of red clover. I think we should have a hand in improving the red clover if we can get a particular "improvement" from our point of view. When we produce a short corolla variety stronger growing than any other, it will be used in the rotation crop sowings, and would be a great addition to bee pasture. I should like to know whether there are any difficulties considered to be unsurmountable in getting the short corolla. It will be easy to procure from any farmer some red and alsike clover plants, and endeavour to get cross-fertilisation next year.—J. N. Kidd, Stocksfield.

EXCESSIVE SWARMING.

[8510] I heartily sympathise with Mr. Crawshaw (page 285) as regards his bees swarming this year. My experience is similar to his, as I have been kept busy trying to find accommodation for the swarms (thirty-three from forty-one hives). I think it must be Nature fighting against the extinction of so many stocks through "Isle of Wight" disease. Some of my hives that swarmed had two stories of combs in deep frames and two racks of shallow frames, no excluders being used, so that the queen might have plenty of room. The queens seemed during the poor honey weather of June to have worked up to the top of the hive, and then swarmed, leaving sometimes two body-boxes of comb empty below the brood. I should be interested to hear what plan Mr. Crawshaw adopts to prevent swarming, as the usual methods seem to have failed this year. Do you think Dr. Miller's plan of shaking the bees on to foundation and tiering up the brood on another hive would work here? Or would the Demaree plan be better?—A. P. W., Alfriston.

"ISLE OF WIGHT" DISEASE.

[8511] The enclosed extracts from my diary may be of use to your readers on the look-out for "Isle of Wight" disease:

No. 3 hive, strong, supered April 25th.

May 5th.—A few drones crawling for last day or so.

May 6th.—About half a pint of bees clustered on ground.

May 13th.—Continuing daily; transferred to hive treated with Ayles' Cure.

May 14th.—No signs of sick bees.

May 17th.—Picked up about fifty and put in box and took care of.

May 24th.—Bees picked up are still alive, but still unable to fly.

May 25th.—Only a few on ground.

May 27th.—Destroyed bees in box, not many had died.

June.—On the few warm days bees crowd the alighting boards on Nos. 3, 4, and 5 hives, all returning at night. No. 3 found full of brood, no honey, fed.

July 1st and 2nd.—Nos. 2, 3, 4, 5, 8, 10 numbers of bees all over the place. Nos. 1, 6, 9, 7, 11, no sign as yet of disease. All except 1, 9, 11 have been treated with Ayles' "Isle of Wight" Cure, which has not fulfilled expectations up to the present. Nos. 1 and 11 are stock and swarm from skep transferred 1910; queen raised last July from their own brood. Nos. 6, 7, 9, driven bees, 1911.

I suppose, Mr. Editor, you will agree that it is "Isle of Wight" disease, but can you make any suggestion as to what I can do to check it, or are we still groping in the dark? I think failures to cure should be mentioned as well as reported cures, in order to keep our learned brethren seeking a remedy.—A. W. R., Poole.

[It is apparently "Isle of Wight" disease, and you have done all you can to check it short of the destruction of the bees.—Ed.]

THE HEATHER HONEY QUESTION.

[8512] A black animal may browse with impunity on a plant which will prove fatal to one of a lighter colour, so that it is not at all easy to decide that heather honey is good for all bees because stocks have been known to get through the winter on such a food (page 235). Heather honey may be one of a number of factors which, in combination, destroy the stock. The difference of opinion may arise from the presence or otherwise of the other factor or factors.

That Huish found it necessary to write against the view that heather honey was of inferior quality is good enough proof—in conjunction with the statements of other writers—that such a view was actually prevalent. Huish took the wrong side in a scientific controversy, and for that reason, according to Mr. J. Rose (page 296), we should reject his opinion that the view of heather honey which prevailed in his day was merely a prejudice.

In the absence of any infallible writers on bees, I do not think it is possible to ignore all books that are not sound on some scientific point. For instance, one of the finest and most complete works on modern bee-keeping is Root's "A B C and X Y Z of Bee Culture." The teaching in this work on the inversion of nectar is, in my opinion, unsound. Must I reject everything in it on that account? Then again, I do not find that the facts concerning brood diseases of bees and the bacteriology of the subject in this country can be squared with current teaching. Following a careful investigation, the text-books will need to be altered. That the text-books are therefore unreliable on all points is an absurd suggestion.

For many years a "Lanarkshire Bee-keeper" taught that heather honey was unsuitable for the wintering of bees. He also stated that our forefathers entertained the same opinion. He probably had some knowledge of the traditional lore of the skeppist because he was a bee-keeper before the introduction of modern methods. The testimony of such bee-keepers as "T. D. N." also show that there is a case for investigation. We may impute to "A Lanarkshire Bee-keeper" opinions that he did not hold, and we may then refer to him for the refutation of opinions expressed by others with whom he is in agreement. But by such methods we are never likely to arrive at the truth.—Geo. W. Bullamore, F.R.M.S., Albury, Herts.

Queries and Replies.

[8495] *Working Stocks one above the Other.—Amount of Comb-honey produced in one Hive.*—(1) I have a W.B.C. hive with non-swarming chamber underneath. In the brood-chamber above this is a ten-frame colony of British bees, with a young 1912 queen. An excluder is between the box of the shallow frames in the non-swarming chamber and the brood-chamber above it. Above the brood-chamber is another excluder, and over this is a second super of shallow frames. On top of this I placed a third queen-excluder, and above this a second colony of bees (a first swarm) on July 8th. May I expect these two colonies to fill up both supers of shallow frames if we have good weather? My bees have access to the heather, and I have an acre of buckwheat within 300yds. of the apiary, so there will be a source of nectar to gather till middle of August,

or perhaps later, according to the season. The white clover honey-flow is now in full swing here, and the bees are bringing in plenty of nectar. (2) Can you tell me the record takes of honey from ten-frame colonies of (*a*) British bees; (*b*) Italian bees; (*c*) Carniolan bees; and (*d*) British Golden bees in the British Isles? A bee-keeper about five or six miles from here told me he got 130 sections of honey from a colony of Italian bees last year (1911), which far exceeded the produce of any of his colonies of British bees, and he made £15 from seventeen colonies, with about 50lb. of honey unsold. (3) Can you give me the address of a queen-breeder in Austria from whom I can get Carniolan queens direct?—MAJOR MAXWELL.

REPLY.—(1) We cannot say what will happen through the method you have adopted. It would have been much better to have united the swarm to the stock, having first removed the queen from the latter. The shallow frames should then have been put above the excluder in the usual way. To be quite plain, you have made a mess of the operation. (2) Sorry we cannot do this, and we should doubt the statement made with regard to the amount of comb-honey secured from one stock. With extracted honey the matter is different, and considerably over 200lb. has been obtained from a stock of British bees worked for extracted honey. We have repeated many times that, taken all round, British bees are the best for this country. The average profit per hive from properly managed British bees is 20s. (3) You can obtain pure Carniolan queens through any of our advertisers who import them.

[8496] *Artificial Increase.*—To obviate natural swarming I made an artificial increase on June 23rd by taking four frames of brood, etc., from each of two ten-frame stocks, thereby making three stocks, each of which I increased to ten frames in due course. A young queen was introduced to the new stock on June 25th. On July 7th one of the parent stocks swarmed, and the new stock swarmed on the 15th inst., in spite of all having supers on. I should be glad if you could point out where I made any mistakes.—F. R., Glasgow.

REPLY.—You neglected to give ventilation at the bottom, although even this might not have prevented the swarm from issuing.

[8497] *Re-queening.*—I shall be glad to have replies to the following questions through the BEE JOURNAL:—(1) Is there any special way of introducing queens to skeps? (2) Have I done right in letting a skep remain on top of the frames in a frame-hive? There is a sealed queen-cell on one frame. (3) Will a swarm come off when the queen is hatched, or should I remove the skep before-hand? (4) Does a swarm leave the hive before the new queen is in possession? (5) What is the usual subscription to Bee-keepers' Associations? (6) What are experts generally paid for visits to apiaries?—J. H., Whitley Bay.

REPLY.—(1) You can do this through the hole in top of skep by means of Sladen's Cage, shown on page 131 of "British Bee-Keepers' Guide Book." (2) If there is a queen in the skep the cell below will be torn down. (3) No, a swarm will not come off. You had better remove the skep, examine both lots and introduce a queen to the one which is queenless. (4) Yes, about three days before the young queen emerges from the cell. (5) 5s. per year. (6) The remuneration is a matter of arrangement between the expert and secretary. If you are a member of a county association you get one free visit from the expert per year.

[8498] *Swarm in a high Tree.*—May I relate what I think must be almost a unique experience? A few days ago a man told me of a swarm of bees, about a mile out of town, in a tree about 20ft. high, he said. When I got to the tree I found the swarm was clustered at a part about 40ft. high, and the longest ladder I could get was quite 5ft. below the cluster. However, I obtained the loan of the town fire escape, through the kindness of the Captain of the local Volunteer Brigade, and was able to get the swarm (a very strong one) quite comfortably. I put it into a hive on ten frames foundation, and on examining I find the foundation all drawn out. Do you think I can conclude that there was a young queen with the swarm, as it was so high up? Old queens, I believe, generally drop on a low tree or bush. May I have your opinion as to the source and value of the enclosed sample of honey?—E. C. G., Nantwich.

REPLY.—(1) No doubt the queen is an old one. The age of the queen makes no difference to the position in which the bees choose to cluster. (2) The honey is of medium quality, is mainly from sycamore, and worth retail 8d. per lb.

[8499] *Swarming Difficulties.*—(1) A week ago I made an artificial swarm. I took three frames from one hive, after brushing off the bees, and three from another with queen-cells; also the bees on the frames. I put two more empty frames one at each side, removed the old hive, which had a shallow-frame box on, to a new stand, and I then put a section-rack under the shallow frames. The new hive was placed on the old hive's stand, and it is simply crowded out with bees. I examined it to-day, and found

the hive packed with bees and a queen-cell sealed over. I put a frame of honey in and also added another frame, making ten altogether. Have I done right? (2) Another hive swarmed on July 15th, but they clustered on a bush close by, and then left and went back to the hive. I was not at home, but when I returned at about 4 o'clock I saw a cluster, which I took up to the alighting board, and the queen ran inside. The swarm came out the next day, went back again, and the bees have been quieter since. There are twelve frames in the brood-chamber, and ten in a doubling-box on top, so the bees have plenty of room. I examined the stock on July 24th, and found the hive boiling over with bees, and three sealed queen-cells. I did not see a queen, but there was the result of her work in the hive. Do you think it was the old queen that came out, and which I ran back into the hive? (3) What shall I do with the three queen-cells? I should like the young queen to introduce into one of my other hives, or can I make artificial swarms? If one waits for the bees to swarm naturally, very often one loses them.—C. J. H., Forester.

Reply.—(1) You should have removed the super from the old stock and put it on the artificial swarm. (2) The swarm returned because they were not accompanied by the queen. She evidently is injured in some way so that she cannot fly. (3) You should leave the best queen-cell, as the bees are deposing her, and you could cut out the others for requeening your other hives; or, if you wish for increase, you could divide the stock, giving each part a queen-cell.

NOVELTIES FOR 1912.

A STEAM-HEATED UNCAPPING KNIFE.

The useful novelty, which we illustrate here, is the invention of Mr. D. H. Lea, of 13, St. Peter's Road, Harborne, who is a practical bee-keeper on a large scale. He states that he has used it himself for two seasons, and claims that the convenience, time saved, and simplicity of working make a vast difference to uncapping work.

The knife has a hollow blade, through which steam from a copper boiler passes, keeping it really hot, and no matter how long the knife is kept at work it is always hot, so long as the copper boiler has water in it and the stove is kept burning. It will slice the cappings off tough combs comparatively easily. Time is saved by the fact that the knife is always at the right temperature and the operator has not to dip it every few seconds into hot water. There is no necessity to scrape the knife as, being always hot, the cappings slide off it into the uncapping tray without sticking. There is an attachment to the knife to carry off the condensed steam, so that no water falls into the uncappings.

The complete outfit consists of a steam-jacketed knife, with a 9½in. blade, a copper boiler of 1gall. capacity, with a centre flue, a drip tin with copper pipe attached to receive the condensed water, and 6ft. of rubber tubing, which is to

STEAM-HEATED UNCAPPING KNIFE.

be cut into approximately two 3ft. lengths, or such lengths as will suit individual requirements. A paraffin or methylated spirit stove, or an ordinary gas-ring should be used to supply heat for the boiler. This is not included in the outfit, but Mr. Lea will supply one if required, at extra cost, or one can be obtained from any ironmonger. The price of the outfit, carriage paid, is £1 18s. 6d. for cash.

Bee Shows to Come.

August 5th, at Melton Constable.—The Annual Show of Bee Produce of the North Norfolk B.K.A. will be held in connection with the Melton Constable Horticultural Society.

August 5th (Bank Holiday), at Cambridge. Honey Show in connection with the Cambridge Town and County Mammoth Show Society. All open classes. Silver and bronze medals of the B.B.K.A. to be competed for; also another silver medal and three special hives. This show also includes dogs, poultry, pigeons, rabbits, cage birds, flowers, fruit and vegetables; also grand programme of sports and motor racing, &c. Balloon ascent and double parachute descent by Captain and Miss Spencer. Special engagement of the Black Dyke Band. Mr. W. Herrod, F.E.S., expert to the British B.K.A., will lecture and demonstrate in the bee and honey department during the day. **Entries closed.**

August 7th, at Blythe Bridge. — Blythe Bridge Horticultural Society. Section for Bees, Honey, and Wax. Open classes. Schedules from Chas. Beeston, Blythe Bridge, Stoke-on-Trent.

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester. **Entries close August 3rd.**

August 14th, at Wye, Kent.—11th Annual Exhibition in connection with the Wye Grand Horticultural Show. Classes to suit all Bee-keepers, great and small; two 5gs., one 6gs., one 2gs. cups in different classes. Various classes open to Kent, Surrey, Sussex, and United Kingdom. Splendid prizes and low entrance fees. Send for schedules to Mr. Alfred Lepper, Secretary, Kent Honey Show, Wye, Ashford, Kent. Note.—Schedules will be sent to competitors of 1911 without application. **Entries close August 5th.**

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 7th, 1912.**

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 22nd, at Abington Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 28, at Horniman Hall, North End, Croydon.—Exclusive Show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Schedules from A. Wakerell, 21, Mansfield Road, Croydon.

August 28th, at Chester.—The Cheshire Bee-keepers' Association will hold a Honey Show, in conjunction with the Cheshire Agricultural Society. Good classes and prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4 and 5, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetherel, Cumberland.

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

September 14, at Dumfries.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in St. Mary's Hall. Five open classes; Three 1-lb. jars extracted 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Schoolhouse, Howwood, Renfrews, N.B. **Entries close September 7th.**

Notices to Correspondents.

A. G. C. (Chudleigh).—*Late Honey Harvest.*—(1) Yes. (2) The bees are close enough to work the heather. They can fly two miles in search of nectar. (3) The bees sent are hybrid Ligurians.

Honesty.—*Deposit System.*—Our deposit system, which was instituted about twenty years ago, was designed to protect readers from unscrupulous persons, such as the one you mention. We regret to hear of your unsatisfactory experience, and hope you will use the "system" when dealing with strangers in future.

Radnorian (Presteigne).—*Staging Honey at Shows.*—(1) The shallow combs should be staged in cases made for the purpose. We recommend you to get the new book on exhibiting by W. Herrod. An illustration on page 44 shows the proper way in which to stage these frames. (2) The round jars are the ones in which honey is usually sold. You could get special jars from the manufacturers, but that would entail extra expense.

J. M. (Bristol).—*Queenless Bees Carrying Pollen.*—(1) Yes; but you will find that the young queen will lay eventually. (2) You could use the honey for home consumption, but should be extremely careful that no bees gain access to it.

A. T. J. (Essex).—*Insect Nomenclature.*—The insect is a drone fly, usually found in the neighbourhood of manure or sewage.

E. H. (Salop).—*Ownership of Swarms.*—The person can refuse permission for you to enter his garden to secure your swarm, but you can sue him in the County Court for the value of the swarm. A. N. (Wootton).—If you can prove that the hive was empty and that your bees entered it, you can sue your neighbour in the County Court for their value.

T. F. B. (Lancashire).—*Tin as a Honey Receptacle.*—If you use air-tight tins as supplied by appliance dealers, no deterioration of the honey will take place. An earthenware vessel such as you describe will answer the purpose, provided that you can tie it over so that it is air-tight.

E. B. (King's Heath).—*Swarm or Cast?*—You can know a cast from a swarm by its small size and its having a virgin instead of a fertile queen.

F. R. (Bath).—*Using Suspected Combs.*—It will not be safe to use the combs. Melt them down, and have the wax made into foundation.

M. C. R. (Worcester).—*Judging Bee Products.*—All the information you ask for is given in "Producing, Preparing, Exhibiting, and Judging Bee Produce," which can be had from this office at 2s. 2½d. post free.

Constant Reader (Westwell).—*Persistent Swarming.*—The next time the bees come out hive them into a frame-hive, after having previously put in a frame of brood from one of the other colonies. It is difficult at times to account for the vagaries of bees.

J. W. D. (Fareham).—*Heather Honey Press.*—Your design would answer very well for pressing heather honey from the combs.

J. W. H. (Leeds).—*Quantity of Stores for Winter.*—It means 30lb. of liquid food.

W. C. (Morchard Bishop).—*Name of Plant.*—The plant is *Achillea millefolium*, commonly known as Yarrow.

L. P. (Selby).—*Race of Queen.*—The queen is a virgin of the ordinary English variety.

Honey Samples.

W. J. F. (Perth).—The honey is mainly from the limes. It contains just sufficient honeydew to spoil it for sale purposes, but it is quite suitable for home consumption.

J. R. (Long Cross).—A good medium-coloured honey from mixed sources; worth about 10d. per lb.

Novice (Anglesey).—No. 1 is a good medium-coloured honey from mixed sources. No. 2: a light honey from clover, good in all points except density. No. 3: a thin, dark honey from fruit and hawthorn blossoms; good in flavour. No. 4 is a light-coloured honey from clover; good in all points.

Suspected Disease.

E. D. (Hexham).—We are afraid from external symptoms that the bees are affected with "Isle of Wight" disease.

A. J. (Northants).—The comb is affected with foul brood. Use Apicure.

C. L. P. (Hatch End).—The bees are too dry for us to discover cause of death.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 344

SPLENDID new English Clover Honey, 60s. per cwt.; sample, 3d.—A. COE, Apiary Hall, Ridgewell, Halstead, Essex. v 294

LIGHT AMBER HONEY, screw top bottles, 8s. 6d. per dozen; 96s. per gross, f.o.r., cash with order.—HACKER BROTHERS, Crockerton, Warminster. v 336

SURPLUS QUEENS. — Carniolian Sladen Hybrids, 5s.; pure Italian, 4s.; English Blacks, 3s. 6d.; testimonials; orders rotation.—E. WHEATLEY, Spa Apiary, Hinckley. v 334

SITUATION REQUIRED by young Man, with good knowledge of bees, garden, and carpentering.—"WAX," c/o "B.B.J.," 23, Bedford-street, Strand, W.C. v 331

SPLENDID Light Extracted, 56s. cwt., f.o.r.; sample 3d.—SIMCOX, 17, Victoria-road, Fallings Park Wolverhampton. v 330

VIRGINS, splendid Blacks, 1s. 6d.; Fertiles (few days), 4s.; Nuclei, 4 frames, 1912 Queen, 12s. 6d.—PAUL, Salisbury-road, Bexley. v 329

24 DOZEN first-class Sections, 1912, Down Honey, well filled.—Apply, STONE, Long-street Downs, Enford, near Pewsey, Wilts. v 327

STRONG STOCKS, on ten and twelve frames, with 1912 prolific Queens, 23s. and 26s.; ditto, Nuclens, four and six frames, 11s. and 14s.—R. WOOD, Spring Bank, Ripon.

OFFERS WANTED for three strong Stocks, in good hives, with section racks.—PRIESTMAN, 247, Bloomsbury-street, Birmingham. v 311

FINEST light Scotch Clover Honey, £3 cwt.; sample, 2d.—T. RULE, Summervale, Annan, Dumfries-shire. v 315

APPLIANCES. — Cheap clearance; 2 Hives, Honey Extractor, &c., &c.—BROWN, 3, Windsor-road, Leyton, N.E. v 297

LEE'S Uncapping Outfit, complete, new, cost 30s.; what offers?—HULBERT, Hermitage, Worcester. v 289

FOR HIRE, a "Herrod" demonstrating tent, 10s. 6d. per day, carriage to be paid each way by the hirer.—Apply, W. HERROD, "B.B.J." Office, 23, Bedford-st, Strand. W.C.

Editorial, Notices, &c.

REVIEW.

Catalogue of the Library of the British Bee-keepers' Association.—We would call the attention of our readers to this catalogue, which is now available for use. It has been carefully compiled by Colonel H. J. O. Walker, and consists of twenty-nine pages, 8½in. by 5½in., the names of the authors being arranged alphabetically for easy reference. Great credit is due to the compiler for the comprehensive manner in which the work has been done. The title of every book is given, together with place and date of publication, also number and size of pages. The catalogue contains the rules to be observed by members borrowing books, and with few exceptions all the books will be lent. The exceptions refer to old and valuable ones, which it is difficult or impossible to replace, but these may be inspected by arrangement with the Librarian, at 23, Bedford Street, Strand, London, W.C. The books will be lent free of charge to members personally, or, if sent by post, at the cost of forwarding. The catalogue contains all the books at present in the library, and we intend from time to time to notify in the "B.B.J." any additions, so that those who wish to keep up an accurate up-to-date catalogue may be enabled to make the necessary entries. The B.B.K.A. will be pleased to receive any gifts of bee books, but more especially of such as are not mentioned in the catalogue.

Members of the B.B.K.A. may obtain the catalogue free on application to the Secretary, and a charge of 3d. each is made to non-members.

GLAMORGAN B.K.A.

Annual Show.

The annual show in connection with the Cardiff and County Horticultural Society was held in Sophia Gardens, July 17th and 18th, 1912.

The exhibits were not so numerous as last year, on account of the adverse bee weather, yet the display was a very creditable one, the tables and staging being practically covered. The collection of honey and wax (a new class included this year for the first time) claimed two good entries. That of Mr. E. Church fully deserved the admiration bestowed upon it by the visitors attending the show. Messrs. E. J. Burtt (Gloucester) and John Hibbert and Sons (Cardiff) were represented by two capital collections of bee-appliances.

Lectures and demonstrations were given at frequent intervals by the Rev. H. Morgan.

The ideal summer weather helped to ensure the great success of this year's show. Mr. T. Jordan acted as judge, assisted by Mr. F. Gravil. The Rev. H. Morgan, Messrs. G. P. Workman and W. O. Jones rendered valuable assistance in the department. The awards were as follows:—

Twelve 1-lb. Sections.—1st, Sam Lewis, Bridgend.

Two shallow frames of Honey.—1st, S. Howe, St. Athan; 2nd, R. Morgan; 3rd, Ed. Church.

Six 1-lb. jars of Light Honey.—1st, A. Church; 2nd, W. T. Gunter; 3rd, R. Morgan.

Six 1-lb. jars Medium Honey.—1st, R. Morgan; 2nd, J. B. Kitt, Wenvoe; 3rd, D. George, Marthyr Mawr.

Six 1-lb. jars Dark Honey.—1st, J. B. Kitt; 2nd, D. George; 3rd, R. Morgan.

Beeswax.—1st, D. George; 2nd, R. Morgan.

Articles of Food Containing Honey.—1st, G. F. Braddick; 2nd, T. D. Richards; 3rd, W. F. Gunter.

Honey Beverage.—1st, W. F. Gunter; 2nd, T. D. Richards.

Candy.—1st, W. F. Gunter.

Observatory Hive.—1st, T. D. Richards; 2nd, S. Wakeford.

Six 1-lb. jars Honey.—1st, W. Morgan.

Open Classes.

Honey Trophy.—1st, E. Church; 2nd, T. D. Richards.

Single 1-lb. jar of Honey.—1st, E. Church; 2nd, W. F. Gunter.

Single Section.—1st, Miss Barker, Barnston.

Collection of Appliances.—1st, E. J. Burtt, Stroud Road, Gloucester; 2nd, J. Hibbert & Son, Castle Street, Cardiff.

Twelve 1-lb. Sections.—1st, D. George.

Twelve 1-lb. jars Light Honey.—1st, E. Church; 2nd, R. Morgan; 3rd, W. F. Gunter; v.h.c., G. F. Braddick.

Beeswax.—1st, S. Wakeford; 2nd, D. George; 3rd, Rev. H. G. Stanley; v.h.c., R. Morgan.

Special Prizes Given by Messrs. Hibbert and Son.

Six 1-lb. jars Light Honey.—1st, A. Church; 2nd, R. Morgan; 3rd, W. F. Gunter.

Six 1-lb. jars Dark Honey.—1st, R. Morgan; 2nd, D. George; 3rd, Rev. H. G. Stanley.

ST. ALBANS AND DISTRICT B.K.A.

It is gratifying to report that notwithstanding the inroads of "Isle of Wight" disease in the apiaries of its members, the third annual exhibition, held in connection with the Horticultural Society's show at Clarence Park, St. Albans, on July 13th, proved an unqualified success. Many excellent exhibits were staged in eight classes. The Association's own

exhibit, for which Mr. E. Watson, the Secretary, was mainly responsible, attracted considerable attention.

The judges were Messrs. G. H. Cripps, E. Robb, and H. Lewis, who made the following awards:—

MEMBERS' CLASSES.

Six 1-lb. jars Extracted Honey.—1st, E. Watson, St. Albans; 2nd, J. H. Roskilly, Frogmore; 3rd, A. Groom, Harpenden.

Twelve 1-lb. jars Extracted Honey.—1st, E. Watson; 2nd, E. C. Berry, Hatfield; 3rd, J. Rumball, Ayot.

Six 1-lb. Sections.—1st, G. Ketteredge, Boreham Wood; 2nd, G. Corn, Napsbury; 3rd, Mrs. Masson, Hatfield.

Twelve 1-lb. Sections.—E. C. Berry.

Beeswax.—1st, H. P. Perkins, Frogmore; 2nd, E. Watson; 3rd, J. Rumball.

OPEN CLASSES.

Single 1-lb. jar Light Honey.—1st, J. Prior, Stockbridge; 2nd, J. E. Smith, Ipswich; h.c., W. Watts, Northwood.

Single 1-lb. jar Medium or Dark Honey.—1st, E. C. Berry; 2nd, G. Spencer, North Mymms.

Single 1 lb. Section.—1st, Mrs. Charrington, Lewes; 2nd, G. Corn; h.c., Mrs. Byles, Andover.—COMMUNICATED.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

Queen Introduction.—To obtain the best results from our bees it is necessary that each colony should be headed by a young, vigorous queen. To this end it will pay even those having a few colonies to give attention to the rearing of queens, so that in selecting by their own observation a good strain of bees may be obtained.

Queen-rearing is a most interesting and profitable occupation, and later on I will deal with several simple methods of rearing that can be followed by the novice.

Queens, except under exceptional circumstances, such as for breeding purposes, should never be kept beyond their second season. Time and again I am asked the question: Which is the second year of a queen? The answer is quite simple, if we take poultry as an example. A hen is in her second season the year after she is hatched, therefore a queen reared in 1912 will have spent her second season at the end of 1913.

The best time to re-queen is in the autumn, immediately after the supers have been removed, and not in the spring, for three reasons:—(1) If it is necessary to purchase queens for the purpose, they are more expensive in the spring, on account of scarcity, than in the autumn, when dealers have, as a rule, a number of surplus queens on hand, which, if not cleared, will be wasted through the difficulty of keeping them through the winter. (2) The most important time for egg-laying is in the early months of the year. Queens commence to lay about the last week in January. At the earliest queens cannot be introduced until April, so that if the operation is delayed until the spring, at least two months is wasted. (3) By introducing immediately after the honey harvest, observation can be kept for a time upon the work of the new mother, and if not satisfactory, there is time to remove and replace her with another.

We will suppose that arrangements have been made for securing the queens required at a definite time. The first thing is to catch and kill the queen to be removed. This can be done by a careful examination of the combs. As each comb is removed watch on the floor-board, for in the autumn queens are very prone to go on to the floor-board immediately the smoke or carbolic is applied. If the queen cannot be found in this way by the novice, which is often the case, then another plan must be adopted. Place a sheet of excluder zinc over the entrance of the hive, so that all bees entering must go through it. A board sloping from the alighting-board to the ground, as for hiving a swarm, must also be used. Take the combs one by one, commencing at one side and going right through, shaking the bees on to the board; the workers run back into the hive, but as the queen cannot pass through the excluder, she is left outside, and can easily be captured. Both these operations are best carried out in the evening, so that undue excitement will not induce the bees to rob, as they will have the night to settle down before commencing to fly. If carried out in the daytime trouble may ensue, the bees becoming demoralised through robbing and fighting.

The colony should remain queenless for at least twenty-four hours; this will induce them to accept an alien queen more readily.

At the end of that time the queen should be introduced, which means that as bees recognise each other by smell, she must be placed in the hive for a given period, in such a position that she will attain the scent of the hive without the bees being able to get at her, which, if they could, would result in them killing her by balling.

There are a number of methods by which queens can be introduced. The first one I mention is the direct method. My advice to the novice with regard to this is *don't*. That it succeeds in the hands of the experienced bee-keeper in the majority of cases there is no doubt, the exception being when we have a valuable queen. In such a case it is ten to one that she will be found dead outside the

Live. It pays to take a little trouble in introducing queens, and the novice will be well advised to use one of the many reliable cages in use, with which, if the instructions are carried out, the failures do not reach one per cent.

(*To be continued.*)

BEES AND NEIGHBOURS.

COUNTY COURT ACTION.

The *Yorkshire Herald*, in the issue for July 11th, publishes an account of an action at law regarding bees, in which Mr. David Jennings, saddler and harness-maker, Topcliffe, claimed damages, £10, and asked for an injunction against Mr. George William Hildyard, headmaster, Topcliffe National School, for keeping bees which were a nuisance and an injury.

Mr. Buchanan, Thirsk, was for plaintiff, and Mr. Gowland (Edmondson and Gowland, Thirsk and Ripon) for defendant.

David Jennings said defendant lived next door to him, and there were gardens at the back. Defendant had kept bees for 13 or 14 years. He commenced with two hives, but now he had sixteen. The bees were a dangerous nuisance, they stung, and got into the house and premises. He had a horse and some cattle, and they were dangerous to them. The bees got into the house and the bedrooms and kitchen, and his daughter had complained for years about the nuisance.

His Honour: Why do you claim damages £10?

Mr. Jennings: Because I had to engage a servant as my daughter got stung. She was stung on the temple in 1910 and was ill.

His Honour: Have you made any complaint?

Mr. Jennings: My daughter has by my orders many times. The first time I complained was through a solicitor.

Witness (continuing) said there was a three-rail fence between the gardens, and the hives were only three yards from their garden walk. They wanted the bees removed farther away as witness and his family could not get their meals for them, and could not hang out clothes in the garden.

Cross-examined by Mr. Gowland, witness said probably defendant had kept bees since 1898. Miss Gill, who lived on the other side of witness's house, also kept bees, but she had not kept them for long. His daughter, he believed, once threw soil at the bees, but she never used a switch. What she did was under great provocation. He had received a letter from Mr. French, solicitor, in April, but witness had made complaints before he received the letter. A servant cost about £25 a year, 2s. or 2s. 6d. a week with food in addition. He had to get a servant owing to his daughter's illness.

Miss Jennings corroborated, and said the bees came into the garden in great numbers and also into the house. The bees were not Miss Gill's, as hers were farther away. They could not move for bees, and it was like being in a hive. If they hung clothes out in the garden the bees alighted on them and dirtied them. They also interfered with her when cooking, and she had suffered from severe shock.

Cross-examined by Mr. Gowland, she said she was treated by Dr. Mitchell for shock from bee stings. The bees from Miss Gill's did not come their way. She never said she was fond of bees, and was not watching Mrs. Hildyard when she was stung.

Charles Trueman said he had kept bees for fifty years, and he had seen the bees in question two or three years ago, and considered the hives were too near the house. There would be 25,000 or 30,000 bees in a hive, as they were very strong ones. There would be about half-a-million bees. As a rule bees were quiet, but at times they became ferocious.

Cross-examined by Mr. Gowland: It would be impossible to distinguish between Miss Gill's bees and defendant's.

Emma Appleton, who had done washing for Miss Jennings, said she had had to wash clothes over again which had been dirtied by bees. They interfered with her in the garden when hanging out the clothes.

Mr. Hildyard said he had resided in the same house since 1892, and he had kept bees for 13 or 14 years, and had never had a complaint. The hives were 53yds. away from the plaintiff's back door. The school children had played about, but no complaint had been made. The bees had been interfered with, and he gave instructions for a solicitor's letter to be sent, and afterwards received a letter saying the bees had to be moved. Up to that time no complaint had been made.

Mrs. Hildyard said the bees were hers. There were 12 hives and four new swarms. She did not think they were a nuisance. Miss Jennings had said scores of times she loved bees, and often talked about them when in the garden hanging out the clothes. Once afterwards she said she had been stung, but did not make any complaint. There was no bad feeling whatever on the part of the witness.

Mr. Buchanan quoted from *The Times*, Harker v. Reynolds, where an injunction was obtained against the defendant, who kept ten hives of bees.

Mr. Gowland addressed the Court for the defence, contending the bees were not kept in such numbers as to be a nuisance, and plaintiff could not distinguish between defendant's bees and those of Miss Gill, who lived on the other side. Bee-keeping was recommended by the Board of Agricul-

ture. It was natural if soil were thrown at the bees they would attack in return, but there was really only one complaint of having been stung.

His Honour, in summing up, said he did not think bees had been kept in such large numbers as to be a nuisance. There was no complaint until a solicitor's letter was sent, and then the Court was set in motion. He did not think there was sufficient evidence to say a nuisance had been caused and that an injunction should be granted; but he did think it might be better if the bees could be moved a little farther away. Plaintiff might have said to Mr. Hildyard, "Will you move the bees a little farther away?" It was a very strong order to ask that a man should not be allowed to keep bees on his own premises, and no complaint was made during all the years until after a solicitor's letter had been received by plaintiff. Plaintiff might have said, "Don't keep so many bees," but there was nothing said until after the lawyer's letter. The bees might be moved farther away, but that he could only recommend. Judgment would be given for defendant with costs.

BRIEF REPORTS, &c., OF THE HONEY SEASON.

An exceptionally early season. Bees came through the winter very strong, and increased rapidly, owing to the plentiful supply of stores (in my own case *heather* honey chiefly) on hand from the previous bountiful year. Hawthorn hedges were a sight to see when in blossom. I never remember seeing the white thorn trees so covered with bloom. This early promise of full supers was, however, unfulfilled, owing to the unpropitious weather of June. During this month the bees appeared to "mark time," so far as gathering surplus was concerned, though they utilised the honey on hand in brood-raising, and every hive at the end of the month was crammed full of bees. Clover blossoms appeared early in June, a fortnight earlier than usual, and when the weather changed for the better, about the beginning of July, the nectar simply rolled in, and a mania for swarming attacked the bees. Nearly every stock seemed to outvie its neighbour in the size of the swarm it could send off and in selecting the highest tree it could find to cluster on.

Our stock of empty hives, travelling boxes, skeps, &c., soon became exhausted, the final swarm having to be housed in the "gude wife's" Singer's sewing machine cover, the door at the back of which is now frequently opened to observe the progress within. (The "cover" has not yet been missed, though inquiries have been overheard being made regarding other articles of domestic use that have mysteriously disappeared lately, and a surprise visit to the apiary would no doubt have been made ere this had not the last one resulted in a swollen lip on which a too enthusiastic bee alighted and dashingly saluted.) The clover honey season, our chief source of surplus, is now practically at an end, and although swarming has necessarily reduced my surplus, I shall still have several hundredweights of excellent honey to dispose of.

For many a day I shall remember the incomparable view of myriads of clover blossoms which I had this month in a ten acre clover field about a mile from my apiary, when, with the ready consent of a friend, I placed a 10lb. swarm in its centre, on the evening of its issue, hived on six frames of drawn-out comb, and four of my own make dummy frames in the body-box; a super of shallow-frames, filled with foundation, spaced 1¼in. from centre to centre, being placed above. We have still the heather season to look forward to here, and as, for a quarter of a century, this honey has formed the chief winter stores of my bees, without either the bees or their owner being poisoned yet, I unhesitatingly take my stand by the side of D. M. M., and with claymore uplifted, defy any bee-keeper to produce a better winter food for bees than fully ripened and capped heather honey. If any bee-keeper is foolish enough to attempt to winter his bees on uncapped honey, whether it be heather or any other kind of honey, he is only courting disaster.—Herbert Samways, Maesybont, Llandebie, Carmarthenshire.

The honey crop here up till the end of June was very poor. Since then it has been good, strong hives in good districts averaging about 80lb. of a good quality honey, although the heat made swarming very troublesome.—W. A., Ayr, N.B.

The season here has been a fairly good one. We had a nice honey-flow in May, and another this month, but work in supers is almost over now. June was quite a blank month for storing. The honey generally is light-coloured and free from honey-dew. Swarming started very early, several issuing in early May and one or two in April. One person here had three stocks which sent off two swarms each in May and early June, all six swarms being sold. One stock in a frame-hive with super on swarmed again on July 12th. Isn't it very unusual for a stock to have a second turn of swarming as this hive? The first and second swarms both came out in May. They filled several sections in the super, besides sending off the swarms. Another bee-keeper here had a swarm this month off a May second swarm hived in a skep. P. Grinsted, Hassocks, Sussex.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

TIMELY CAUTION.

[8513] I have read the letter (No. 8497), page 284, headed as above and signed "One of his Victims," with feeling, as apparently the person referred to is the same as one I have had some recent experience with.

Some time ago this "person" sent me a postcard, stating he would call on a certain day, when I went home specially early to meet him.

After some time spent in endeavouring to find out the object of his mission, under the guise of representing a local B.K.A. I allowed him to look at my hive, when he at once stated, "Ah! foul brood is here." Then, after informing me that the stock would have to be carefully treated, that all the ten brood combs (new this year) would have to be destroyed later on, he stated he would effect a cure and get the bees into a strong stock for next year, for a fee. After this he left. I might mention that it was the fact that he mentioned the B.K.A., of which a friend of mine was the secretary, that made me receive him at all.

On further consideration I at once communicated with the firm who supplied the stock, and they immediately sent an expert, who made a thorough examination and found but the slightest disease, treated the stock there and then, and it is now an exceedingly strong one, full of brood in all the combs and all covered with bees, notwithstanding a nucleus swarm has been made from it, and I have taken a rack of sections, one box of shallow frames full of honey, and there is another rack of sections ready to take this week. The stock is strong enough to take another swarm from it if I wished, and this without the *drastic* treatment suggested.

A few weeks subsequent to this person's call, he wrote stating he proposed anticipating his first visit for treatment, so I at once wrote him what I had done and that I did not require his services for the time being. Then commenced a series of abusive letters, stating I had entered into a contract, I could not break it, he insisted on payment, that he was still my "bee expert adviser," and sent in his account with a 1d. added for postage. Three or four other letters followed, each time adding another 1d., and kept repeating and expanding on the "rotten" state of the stock, etc.

His last letter stated he would be in my neighbourhood on a certain evening and would call, to which I replied I did not intend to continue the correspondence, and if his object in calling was to foist his services on me by endeavouring to substantiate his supposed contract he had with me he had better not come. He did *not* call.—An Attempted Victim.

THE NORWAY MAPLE AND THE SYCAMORE.

[8514] On Easter Sunday I saw a large Norway Maple (*Acer Platinoides*) in full bloom, and humming with hive bees. I do not remember seeing a Norway Maple in bloom before. It was a fine sight, not a leaf unfolded, but the tree full dressed in pale primrose, glistening in the sunlight. This tree appears to be of special value to bee-keeping, as it was in bloom a fortnight earlier than the sycamores.

I like those sycamores best that are adorned, emblazoned, with scarlet seed-pods. It seems strange that nurserymen send out so many with pale green pods. Do they place no extra value on this decorative character in selecting trees for park and avenue planting?—J. N. Kidd. Stocksfield.

TEMPER OF BEES NEAR TOWNS AND IN THE COUNTRY.

[8515] I notice in that interesting article "Blurts from a Scratchy Pen" in the "B.B.J." of July 11th the question is raised about bees situated near a town being better tempered than those right out in the country? I should like to endorse that question by quoting a similar case, and with your permission to try to give a satisfactory answer, looking at it from the bee-keeper's point of view, and, if possible, also the bees.

Taking the case of a bee-keeper who has his apiary set out from (shall we say) a picturesque point of view rather than a practical—or, in other words, has his hives dotted about all over the garden anyhow—it will be noticed, I think, that those stocks that are placed near the house or a footpath, or part of the garden which is constantly being used, are, as a rule, more gentle in the way they receive the bee-keeper's attentions than those situated in a remote corner which is hardly ever visited. Now why is this? And I think the answer to this question and to the one mentioned in this week's "B.B.J." is summed up in the word "habit."

Now let us see how the answer applies, looked at from the point of view of a bee-keeper. He reasons to himself that, as people and things are constantly passing those hives near the house, etc., he supposes that the bees get used to them,

and so don't mind; whereas those stocks in the second case, not having this constant stream of traffic passing them, when anything unusual does turn up near them, the bees naturally try to satisfy their curiosity by investigation, which may often be mistaken for violence; and when this mistake does happen the result is generally violence, with a big "V."

Now, by a mighty stretch of imagination, let us try to look at the case from the bees' point of view; but it may be as well to mention here that, as it is written by a bee-keeper, it will probably be the same point of view already mentioned dished up under another title. For the moment let us forget about bees, hives, or anything appertaining to apiculture. Take the case of those unfortunate individuals who live in big towns and are surrounded with all the latest modern conveniences and improvements, amongst which may be catalogued the following:—motor omnibuses, lorries, taxis, barrel-organs, paper-boys, milkmen, and other noises and cries which are of daily occurrence in any big city. When the individual first comes to the town he not only has his eyes opened, but wonders how on earth he is going to remain alive with such a fearful row and bustle going on all around him. But as he cannot do anything to prevent it, he makes the best of a bad job and gets accustomed to it: eventually taking all these things as a matter of course, and not paying any attention to them: later on, even wondering how any person unaccustomed to these things can take so much notice of such ordinary occurrences. Now let us shift our scene to a quiet village miles away from anywhere, where everybody knows everybody else, and more often knowing what they are going to do before the individuals themselves have made up their minds. Then imagine that a few of these modern improvements one day suddenly appeared in the centre of the village. The milkman waking everybody up with his horrible cry; the paper-boy shoving the latest editions under your nose every time you go out: motor 'buses and taxis flying up and down High Street and Church Street, so that the only way to cross from one side of the road to the other is by the "Bobby" on duty holding up the traffic; barrel-organs to play to you while dining; and, lastly, at night motor lorries carting rubbish, etc., from one place to the other, making sleep impossible, while there is no traffic in the way to stop them. Supposing these, or even one of these things, suddenly appeared in the middle of the village, what would happen? Why, the whole place would stop work, gather round, and seek to satisfy their curiosity; in other words, make themselves a beastly nuisance to the unwelcome intruder. There would probably be some who would not trouble to find out the why and the wherefore of the intruder, but would boil over with rage at his coming to disturb their peaceful atmosphere, and would greet his appearance with "What the —— are you doing here? Clear out!" Now go a step further, and behold this intruder not paying the slightest attention to the disturbance he has caused, but actually having the face to pull the place to bits. What would happen? Indignant protest, followed by "peaceful picketing," and the intruder would depart, thinking what a beastly bad-tempered lot those people were. Now if we substitute the word "bee-keeper" for "intruder," "bees" for "people," "hives" for "town and country," "situation of near a house or footpath" for "living in town," ditto of "remote part of garden" for "quiet village." I think we shall see things from as near a bee's point of view as it is possible for a bee-keeper to get.—W. G. Coates.

A SWARMING EXPERIENCE.

[8516] One evening in the late summer of 1910 a neighbour came to tell me that a swarm was out. I am sorry to say that I cast reflections upon his veracity, but condescended to follow him to a patch of waste land near, where, upon the ground and amongst some rough grass, a small swarm was certainly clustered. A skep was brought and the operation of hiving successfully performed, but when the skep was lifted for transferring to a more suitable spot the whole swarm took flight, leaving me with the empty skep.

They clustered once more on the ground a few yards away, but this time along the border of the highway, where the same process of hiving again took place, only to be followed by an "encore" performance on the part of the bees. This time the swarm moved slowly along the highway, causing some alarm to passing pedestrians, and then into a neighbouring field, where I followed them. Not wishing to lose them I had followed rather closely, when all at once I noticed a change in the direction of their flight. All seemed to be heading for me. I called out to my neighbour, "They seem to be going to swarm on me this time!" And it was so. In a few seconds I was fairly dressed in bees from my neck to my ankle along the left side. Gradually they clustered more, until the swarm—about the size of a football—had collected about my left knee. By this time quite a small crowd had gathered in the road. The man with the camera was sent for, but like the policeman he could not be found, and an unique photograph was lost. By an effort worthy of a contortionist I managed to

obtain a fair view all round the swarm and discovered "her majesty"—a fertile queen, by the way—on its surface. She was picked off. A friend brought me the skep, into which I placed my foot, gave a kick, and then dropped the queen amongst the bees. The hive was turned right way up, and a chance given to the bees to gather together once again. Something suggested that to make them stay this time they should be fed. This was done, and late in the evening they were hived. But they took wing again the next day, this time clustering in a neighbouring allotment, from which I once again took them.

These bees were a puzzle to me. I was expecting no swarms. In fact, the season was too far advanced. But—and here the tale goes against myself—on examining all my stocks I found that a four-frame nucleus hive was empty.

It was a hunger swarm, caused by the nucleus having been robbed by the stronger stocks without my knowledge.—D. WILSON.

HIVING A SWARM.

[8517] A reader sends us the enclosed "cutting" from the *Somerset Advertiser* as an interesting item for bee-keepers:—

A German contemporary suggests the following method for hiving a swarm.

When a swarm has settled, take a frame of sealed brood, we presume from the hive which has thrown the swarm, and, after having shaken all adhering bees from it, fasten the frame to a pole, and bring it into close contact with the clustered bees.

We are told that the bees of the swarm will immediately cover the frame on both sides, and that more and more bees will follow until the whole swarm is gathered about the frame on the pole. Then the frame is lowered, gently detached, and placed in a new hive with a sufficient number of empty combs, or frames of foundation on each side of it.

The hive must be properly shaded from the heat of the sun, or the brood may be injured. Will any reader make a trial of this method and report to us on its merits, for the benefit of fellow small-holders?

Queries and Replies.

[8500] *Beginner's Queries.*—I am a novice at bee-keeping, and had a swarm issue on June 1st, a second coming off on the 14th. Will you be good enough to tell me through "B.B.J.":—(1) Which queen leaves with the first swarm? (2) What length of time is required for a queen to lay after leaving the cell? (3) How long is the period from the time eggs are laid until bees are ready for working? (4) How far will I require to move hives from old stands to ensure bees remaining on new site at the heather? Is a mile too short a distance?—D. M. C., Ayrshire.

REPLY.—(1) It is the old queen which leaves with a swarm. (2) From five to ten days, or longer if the weather is too bad for the queen to fly for mating. (3) Twenty-three days. (4) At least two miles.

[8501] *Taking Hives to the Heather.*—As the time for removal of the hives to the heather (where accessible) is close at hand, I dare say a few hints on their preparation and removal would be greatly appreciated by numbers of your readers, certainly by the writer, who had the misfortune to lose two of his stocks during transit to the heather last year. (1) Do you think I could remove a swarm of this year? Five of its combs are old, and the others made from full sheets of wired foundation. It is in a very forward condition. I may add that I am about ten miles' journey from the heather. (2) What is the best material to pack around the section-racks? I used wool last year, and am told it is the worst possible thing I could have used. (3) Do you think I would improve my black bees by crossing, and what cross do you recommend? I am rather reluctant to buy new queens at present, on account of so much disease in the country. Do you think I would be running any risk if I purchased from some reliable dealer? — "NEW NORTHERN READER."

REPLY.—(1) It is rather risky, but with careful packing no doubt you could transport it without mishap. (2) No doubt straw is the best material, as it is light and clean, and would allow of ventilation. (3) We do not recommend crossing bees at all. Stick to the blacks. They are the best all-round bees for this country.

[8502] *Naphthaline in Summer. Removing Surplus.*—I should be much obliged if you would give me some information on the following points in the columns of the BEE JOURNAL:—(1) With regard to Naphthaline: Is it necessary to renew it in the hive during the summer? If so, how is it best done? I have a cottage hive, and with two supers, which is too heavy for me to prise up the brood-chamber and put it in from the back. I have also a W.B.C. hive, and could only get it in between the inner and outer case, without taking off the latter, which would also have removed the porch. (2) In removing a section-rack, after having put on the Porter Bee-escape over-night, is it necessary to smoke the bees? I suppose I should take off the rack, then remove the escape, and then replace the quilts over the underneath rack? (3) When putting on the bee-escape, should I smoke

the bees *between* the two section-racks or under both, between the lower one and the brood chamber? (4) Could you tell me of anyone who would print a special label for honey jars from my own design? Thanking you in anticipation for your answer.—I. H. J., Hammersmith.

REPLY.—(1) The napthaline should be renewed immediately before and after the supers are removed. (2) It is not necessary to use smoke to take off the rack, but it must be used for the removal of the escape and the replacing of the quilts. (3) Only smoke under the one to be removed. (4) Any printer will do this for you.

[8503] *Preventing Swarming.*—On the 8th of last month I examined a stock on ten frames in a W.B.C. hive, which the owner believed to be in good order and progressing satisfactorily. It had already given twenty-one completed sections, was supered with one rack of shallow frames three-parts filled, with a further rack of the same underneath partly drawn out. On taking out the frames I found a number of ripe queen-cells on those containing sealed brood, but there was an entire absence of eggs or unsealed larvæ throughout the combs. On my taking out the third frame, the colony decided to swarm right away, which they did, settling on an apple tree close to the hive, in two separate clusters, about 2ft. apart, of about equal size. I secured the two clusters in one skep, and then proceeded to give room in the hive by taking out five of the old frames and replacing with five new ones fitted with full sheets of worker foundation. I likewise cut out all the queen-cells of which there were thirty-three, and then returned the swarm in the usual manner. On cutting out the queen-cells I found several from which the queens had already hatched. Being only a novice at bee-keeping, I shall now be glad to know:—(1) Did the presence of queen-cells point to the fact that the original queen was killed or discarded by the colony? (2) Was it possible that two swarms left the hive simultaneously, headed by young virgin or mated queens? (3) Was it an abnormal quantity of queen-cells to find in one hive? (4) Was I right in the several operations I performed to meet the case, or could they have been improved upon? If so, in what way? (5) If there were two swarms would the queens settle their differences, leaving one to head the colony? (6) Will the fact of their having swarmed in any way affect the yield of surplus in the hive? Thanking you in anticipation of your kind reply through your columns.—A. J. S., Upper Norwood.

REPLY.—(1) The queen had evidently been killed some time previously. (2) By disturbing the bees you caused the virgins to fly, and the bees joined them in two separate clusters. (3) It is rather an unusual number, but we suspect they were foreign bees which as a rule build a large number of queen-cells. (4) No. You should have let the bees alone, when you found what had happened. (5) Yes. (6) You do not say what you did with the swarm. If it was not returned you certainly will not obtain further surplus from the parent stock.

[8504] *Re-Queening.*—Will you please answer me the following through your valuable "B.B.J.": (1) I have supered my hives with racks of ten standard frames. What state of filling should these be in before I place a rack of sections underneath? (2) I am trying to prevent swarming by giving plenty of room in advance. Can I re-queen my hives in the following way, viz.: destroy the old queen, say, at the end of July, and leave the bees to raise another from eggs which will be in the hive. This is only my second year with bees, and don't know if I could manage queen-rearing yet.—QUEENS, Grimsby.

REPLY.—(1) Two-thirds full. (2) We should not advise you to follow the plan you suggest. It is a very haphazard way of working. Rear queens from selected stocks, and when they are fertile and tested, introduce them to the stocks you wish to re-queen after the old queen has been removed from the latter at least twenty-four hours.

[8505] *Uniting Bees.*—Will you kindly reply to this question in your next issue of the "B.B.J."? I made a stock queenless at night. The next day, about 11 a.m., I united it to a stock with 1912 queen in the usual way, flouring and alternating combs. Result: fighting and loss of 800 or more bees, and, when I examined, loss of queen. What could have been the cause? Too early uniting? Uniting in daytime or what? Thanking you in anticipation.—J. F. A., Northam.

REPLY.—The work should have been carried out in the evening when all the flying bees were at home. Flour should be used abundantly, and you should have caged the queen.

[8506] *Increase.*—I have had great pleasure in reading your Helpful Hints from time to time, and your latest on "Increase," page 252 and 293, was of special interest to me, as I have been thinking the matter over in my mind for some time, and shall feel obliged if you will kindly let me know through the "B.B.J." if I am right in what I propose doing next spring, providing stocks winter all right. My bees are kept in a small plantation some 200yds. from the house, and the time spent in watching for swarms is very considerable, and taking up so much of my time that, if I am to

continue a bee-keeper, I must try different methods.

I have seven stocks. Next year I propose giving stimulative feeding early, and get the bees strong; then remove my best queen on comb with adhering bees, also one other comb with bees and one of food only; place all these in a hive (No. 8), contract entrance, and move to a fresh site, the parent hive (No. 7) to be allowed to rear queens: then in ten or twelve days divide the other six hives, so that one gives brood and the other bees; then in twenty-four hours give each queenless part, 9, 10, and 11, a ripe queen-cell, leaving one in the hive rearing them. (1) If due care is exercised regarding weather, honey plentiful, and drones present, do you think it would be successful? (2) Would it effectively prevent swarming? (3) Will hive No. 8, with removed queen, build up all right, given proper attention? (4) If these operations are carried out end of April or early in May, will the bees have sufficiently recovered to take advantage of the clover-flow, which usually starts here about June 10th or 15th? (5) Would it be better to divide three hives into four, instead of two into three, and allow each to rear its own queen? (6) Will queens reared in this way be inferior to those reared under strictly natural conditions? Thanking you for your Helpful Hints.—GEORGE MOIR.

REPLY.—(1) Yes. (2) We should say yes. (3) Yes. (4) Yes. (5) No. (6) No.

Bee Shows to Come.

August 8th, at Madresfield, Malvern.—Annual show of the Worcestershire B.K.A. Open class for collection of bee products. Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.

August 14th, at Wye, Kent.—11th Annual Exhibition in connection with the Wye Grand Horticultural Show. Classes to suit all Bee-keepers, great and small; two 5gs., one 6gs., one 2gs. cups in different classes. Various classes open to Kent, Surrey, Sussex, and United Kingdom. Splendid prizes and low entrance fees. Send for schedules to Mr. Alfred Lepper, Secretary, Kent Honey Show, Wye, Ashford, Kent. Note.—Schedules will be sent to competitors of 1911 without application.

August 14th, at Alton.—Annual show of the Horticultural Society. Open classes for Honey. Schedules from Mr. A. J. Martin, Market-street, Alton. **Entries close August 12th.**

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106.

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec. **Entries close August 9th.**

August 22nd, at Abington Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston. **Entries close August 12th.**

August 28th, at Chester.—The Cheshire Bee-keepers' Association will hold a Honey Show, in conjunction with the Cheshire Agricultural Society. Good classes and prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4th and 5th, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

September 5th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Judge, W. Herrod, F.E.S. Schedules from A. Wakerell, 22, Mansfield-road, Croydon. **Entries close August 29th.**

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

September 14th, at Dumfries.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in St. Mary's Hall. Five open classes; Three 1-lb. jars extracted 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Schoolhouse, Howwood, Renfrews, N.B. **Entries close September 7th.**

Notices to Correspondents.

X. Y. Z. (Kent).—*Effect of Light on Honey.*—When honey is exposed to light it granulates more quickly than if it is kept in the dark.

F. M. (Minehead).—It will be much better if you allow the bees to remain in the skep until next spring, then transfer as described on page 149 "British Bee-keepers' Guide Book."

T. W. (Renfrew).—No. 1 is the true ling from which honey is obtained. No. 2 is bell heather. Mr. Herrod's book is published from this office only.

M. H. (Ipswich).—*Feeding Bees.*—(1) It is not necessary to feed bees unless they are short of stores. If there is less than eight combs of food, feed by means of a slow-feeder until the end of August. Then put on a rapid-feeder, and give the amount necessary to make up the above as quickly as possible. (2) You did quite right in moving the bees. From your queries we should say you have not the "British Bee-keepers' Guide Book," and would advise you to purchase this.

Beginner (Bletchley).—*Surplus.*—In our experience such a thing has never happened. Are you quite sure that the swarm and cast came from the same hive.

Novice (Glam.)—*Uncapped Brood.*—From the meagre information given us we should say it is caused either by want of food or an over-dose of naphthaline.

Novice (Stourbridge).—*Planting Bee Flowers.*—In such a small space it is not worth while planting bee flowers.

E. H. S. (Comrie).—*Dead Queen.*—The queen is a fertile one, and apparently old.

C. B. (Weybridge).—*Bees Refusing to Work in Section-rack.*—The reason why the bees do not take to the section-rack is because the honey season is practically over.

J. E. J. (Pontardulais).—*Dead Queen.*—The queen is a fertile one, and about two years old.

E. G. (Headingley).—*Artificial Increase.*—(1) It is rather late to increase two strong stocks and one weak one into four strong colonies, but with careful attention, no doubt, you will succeed. (2) The best plan would be to clean the extractor well and paint it with a good white bath enamel.

C. H. R. (Bury St. Edmunds).—*Dead Queen cast out of Hive.*—The queen is a very old one, and no doubt she has been superceded.

G. S. (Bisley).—*Names of Editors of Foreign Bee Journals.*—The following are the names and addresses you require:—German: *Bienenwirtschaftliches Centralblatt*, Ed. Knoke, in Hanover. French: *L'Apiculteur*, F. D'Autemarehe, 28, Rue Serpente, Paris. Swiss (German): *Schweitzerische Bienen-Zeitung*, R. Göldi-Braun, Altstatten (St. Gallen). Swiss (French): *Bulletin de la Société Romande d'Apiculture*, M. Gübler, Belmont (Boudry), Neuchatel. American: *American Bee Journal*, C. Dadant, Hamilton, Illinois; and *Gleanings in Bee Culture*, E. R. Root, Medina, Ohio. Canadian: *Canadian Bee Journal*, J. J. Hurley, Brantford, Ontario, Canada. Australian: *Australian Bee-keeper*, J. Pender, West Maitland, New South Wales.

Honey Samples.

Bees (Paignton).—The sample is a light one, good in all points except density, which is only fair. If you get 9s. per dozen you will do well, per cwt. 50s.

F. J. M. (Upton-on-Severn).—The honey is mainly from clover, and is an excellent sample.

Drumcloc.—All the samples are very good. We should choose No. 1 for showing. Nos. 2 and 3 are rather dull; 4 and 5 lack density. All the samples are light honey.

Suspected Disease.

Novice (Stourbridge).—The comb is affected with foul brood.

Boss (Raydon).—The comb is affected with foul brood.

W. D. (Manor Park).—We are afraid the bees are suffering from "Isle of Wight" disease.

W. W. (Cornwall).—The bees have "Isle of Wight" disease.

A. J. T. (Ilkeston).—From what we can see we are afraid your suspicions are correct.

W. P. (Auckenmallie).—The comb is affected with black brood.

WEATHER REPORTS.

Westbourne, Sussex.

June, 1912.

Rainfall, 3·50 in.	Minimum on grass, 37° on 3rd.
Above average 1·38 in.	Frosty nights, 0.
Heaviest fall, ·69 on 7th.	Mean maximum, 62·9.
Rain fell on 19 days.	Mean minimum, 50·0.
Sunshine, 212·6 hrs.	Mean temperature, 56·4.
Below aver., 67·2 hrs.	Below average, ·9.
Brightest day, 22nd., 13·6 hours.	Maximum barometer, 30·342 on 18th.
Sunless days, 1.	Minimum barometer, 29·410 on 4th.
Maximum temperature, 76° on 22nd.	
Minimum temperature, 40° on 3rd.	

L. B. Birkett.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

Editorial, Notices, &c.

LEICESTERSHIRE AND RUTLAND B.K.A.

ANNUAL SHOW.

The bee department formed a very interesting section of the show, the arrangements for the display reflecting great credit on the able and energetic secretary of the Leicestershire and Rutland Bee-keepers' Association, Mr. J. Waterfield. The number of entries compared favourably with those of previous years, and notwithstanding the dire effects of continuous rains the quality of the honey was extremely good. Reports from Leicestershire bee-keepers, generally speaking, tend to show that the honey harvest has been about the average. Visitors were continually attracted by the observatory hives of bees; indeed, the whole of this department appeared to come in for a good share of patronage. The duties of awarding the prizes were undertaken by Mr. R. Brown, Somersham, Hunts, and Mr. H. M. Riley, Leicester, who made the following awards, and also gave lectures and demonstrations of bee-keeping in the bee tent during the afternoon:—

Class I.—Observatory Hive, Stocked with Bees.—1st, W. H. Fountain, Leicester; 2nd, S. Clark, Leicester.

Class II.—Twelve Sections of Comb Honey.—1st (silver medal), J. Waterfield, Kibworth; 2nd, J. Hunt, Botcheston; 3rd, J. G. Payne, Lutterworth.

Class III. A.—Twelve Bottles Light-Coloured Extracted Honey (North Leicestershire).—1st, W. Wood, Billesdon; 2nd, B. Walker, Seagrave; 3rd, E. Varty, Diseworth; 4th, J. G. Payne, Lutterworth; v.h.c., W. Ward, Seagrave; c., Chas. Bottrill, Kimcote.

Class III. B.—Twelve Bottles Light-Coloured Extracted Honey (South Leicestershire).— 1st, Mrs. Waterfield, Kibworth; 2nd, J. Waterfield; 3rd, J. Bailiss, Nailstone; 4th, Miss Wilkinson, Market Harborough; v.h.c., A. J. Marriott, Market Harborough; c., J. Kenny, Cosby.

Class IV.—Twelve Bottles Dark-Coloured Extracted Honey—1st, S. Spray, Melton Mowbray; 2nd, W. H. Wood, Aylestone; 3rd, H. A. Wheatcroft, Ashby-de-la-Zouch.

Class V.—Three Shallow-Frames Comb Honey.—1st, G. S. Jesson, Hose; 2nd, W. W. Falkner, Market Harborough; 3rd, J. Waterfield, Kibworth.

Class VI.—Twelve Bottles Granulated Honey, any year.—1st, W. Ruddick, Desborough; 2nd, S. Spray, Melton; 3rd, B. Walker, Seagrave.

Class VII.—Display of Honey.—1st, J. Waterfield.

Class VIII.—Six Bottles Dark-Coloured Honey (novices).—1st, E. Wheatley, Hinckley; 2nd, A. Preston, Sileby.

Class IX.—Six Sections Comb Honey (novices).—1st, E. Wheatley; 2nd, Mrs. Wheatley, Hinckley.

Class X.—Six Bottles Light-Coloured Honey (novices).—1st, W. Wood; 2nd, Mrs. Varty; 3rd, E. Wheatley; v.h.c., H. Burditt, Desborough.

Class XI.—Sample Bottle Honey Beverage.—1st, R. Parkinson, Groby; 2nd, Mrs. Waterfield.

Class XII.—Sample of Beeswax (1-*lb.*)—1st, B. Walker; 2nd, E. Varty; 3rd, C. Bottrill.—*Communicated.*

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of July, 1912, was £4,698.—From a report furnished to the BRITISH BEE JOURNAL by the Statistical Officer, H.M. Customs.

AMONG THE BEES.

SHOWS AND SHOWING.

By D. M. Macdonald, Banff.

Two subjects closely knit with successful bee-keeping have hitherto failed to find adequate treatment in book form—now there is but one, viz., "Our Bee Flora." The hiatus in the line of shows and showing has been well and successfully filled up by the publication of Mr. Herrod's new book. Granted the necessity for such a work—and this for long has been patent—I know of no other whose long and varied experience has so well fitted him to tackle the task more successfully. He has been a successful bee-keeper, an exhibitor of note, a prominent first-class expert, steward at many leading shows, judge at innumerable exhibitions, and a sampler of all kinds of honey at the "B.B.J." office. The "great expectations" I had of the venture are more than realised. It is really a notable book. Personally, I have seldom gleaned so much rich stores from the first perusal of any bee-book. As it covers hitherto untilled soil, there is found within its covers a wealth of valuable ore, which thousands will dig up greatly to their own advantage and the good of the craft. Every man and woman who has anything whatever to do with honey exhibits must get a copy, and every other person connected with bee-keeping should not only obtain one but make a very careful study of it. The practical illustrations have been well done and wisely selected, and the study of them will prove a great boon to exhibitors—many of them, indeed, tell the tale more markedly than a multitude of words.

Wanted—The Truth!—"By such methods we are never likely to arrive at the truth," page 306. "I thank thee, Jew,

for teaching me that word!" Huish has been appealed to; here is his verdict: "There is no herb which yields a greater quantity or a *purer kind* of honey than heather." His friend Dr. Bevan, a classic authority, writes: "The people of Edinburgh, though great consumers of heather honey, never complain of any ill effects." Bonnar, of whom our friend is an admirer, says: "It produces a fine high-flavoured honey, which looks very beautiful in the virgin comb, showing like gold. The ladies and gentlemen about Newcastle are very fond of this kind of honey." Pettigrew admired it above all other forms. These four authorities are worth dozens of Keys, Marshalls, and Beuhnes. I could multiply such quotations, but I can find nothing antagonistic worth writing down. Here is the verdict of one who for many years has sampled more honey than any other man in England: "This is one of the finest honeys produced" (Mr. Herrod's book, page 64).

Certain of the Ericacea (page 284) are poisonous, *ergo*, *Calluna vulgaris*, being an erica, must yield poisonous honey! How delightfully convincing! The potato, when first introduced, was said to belong to the same family as the deadly nightshade, therefore certain grandmothers of both sexes then reasoned it out that the potato must be a poison. Is it so? I am not particularly anxious to convince Mr. Bullamore that I am either a good or a bad bee-keeper—indeed, reasoning with a man who considers "my testimony of little value" would be labour lost; but to show other readers how fallacious his reasoning is, I may state that my most successful seasons followed where my stocks were winter-fed *entirely on heather honey*, so his boomerang returns and hits himself.

Mr. Bullamore seems to feel sore over something I wrote regarding a section of his contribution to a recent report. I am sorry I cannot withdraw my opinion that a great part of that section is "irrelevant." I have a worse indictment in regard to a part of it—it is misleading. In "B.B.J.," 1906, p. 312, I noted some rather peculiar characteristics of *very young bees* of a foreign race, and this he quotes and twists into a support of his general argument (page 14). Lower down he again quotes chapter and verse for something I cannot find in connection with his reference on page given.

Cultured Bees.—Those living near London and Oxford are docile, suave, and unirascible! Those apart from these centres of light and leading are rude, uncultured, and sour-tempered! (page 275). I have found Edinburgh bees (the genuine article, city bees) real crusty and hot-tempered, and suffered from their vengeance, while miles out of "town" I handled bees without veil or smoke—but they were Carniolans. Being specially appealed to by my esteemed friend Mr. Smallwood, I would venture to give two theories other than "refinement" for the good conduct of the bees in question. "A hungry man's an angry man!" Per contra, a man just after an excellent meal, made appetising by healthy exercise, is in the best frame of mind to enjoy nature, both animate and inanimate. His nerves are braced, his feelings are buoyant, his touch has no "shake" in it. Hence bees are soothed and quieted by the "gentle yet firm" handling the ancients loved to descant on. Out from either city our expert begins to feel fagged after toiling and moiling the livelong day. His nerves are unstrung, his temper lacks the sweet savour engendered by rest. Bees are very excellent "barometers," and they quickly take their cue from the condition of the operator's nerves. One or two irate bees rouse others—hence the stinging!

Again, I have a theory as to odour playing its part at times in rousing the ire of quiescent bees. Bring with you on tour one of those Society's darlings, intellectual or otherwise, smelling of pomatum or the thousand and one essences affected by such drones, and you have a generator of temper in bees, according to M. Maeterlinck and others. After a long day's tedious cycling, and the constant breathing of the stifling atmosphere of the hive interior, the pores of the body must find relief in perspiration. This begets odour, and the latter generates temper on the part of the bees. Then the hands have been touching so many objects that, in the course of a day's manipulation, they may prove offensive to the denizens of the hive. Personally, my own experience has not proved that any magnetism for good has obsessed the minds of the bees I have examined near classic shades of refinement and culture, such as Aberdeen, St. Andrews, or Edinburgh. I rather like Mr. Smallwood's "theory," interesting as is all he writes: bees really do respond to intelligent handling, but I feel certain the bees of a labourer can be as well behaved as the bees of a lord.

CRAYFORD AND DISTRICT B.K.A.

The third summer meeting of this Association was held on Saturday, July 29th, at the residence of the President (S. K. Keyes, Esq.), who presided, at Dartford. A good number of members were present, and in the unavoidable absence of Mr. Herrod, Mr. G. W. Judge, at very short notice, kindly took his place as lecturer. Mr. Judge first thoroughly examined a number of hives,

amongst which was one containing a maiden swarm, explaining the best way to treat each according to the conditions present. He then explained the methods of moving bees and the precautions necessary in doing this work. The preparation of honey, wax, &c., in all forms, being a seasonable subject, was also dealt with at considerable length, and no doubt gave the audience a good idea of what qualities are required in exhibits to give them a chance of gaining awards.

Very hearty votes of thanks to the President and to the lecturer terminated an exceedingly pleasant and instructive afternoon.—G. H. B.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"ISLE OF WIGHT" DISEASE.

A SUGGESTED CAUSE.

[8518] While it is presumption for an amateur to offer advice to experts, it is none the less true that a novice may be less liable to preconceptions.

When a human being succumbs to the attack of pathogenic germs, we may say death was due either (*a*) to the specific poison secreted in his system by the disease *germ*, or (*b*) to his weak resistant power.

Now in plants and animals inherent weakness is a natural consequence of *inbreeding*. Cross-breeding develops constitutional stamina: inbreeding produces susceptibility to disease. With bees, Nature's method for the prevention of inbreeding is the flight of the swarm right away from the vicinity of the parent hive. But the apiarist intervenes, captures the swarm, and hives it a few yards away from its original home, and the progeny of a single queen may go on intermating year after year, until vitality falls below the immunity point, and Nature readjusts matters with an epidemic.

A perusal of the Board of Agriculture pamphlet leads one to the conclusion that the "Isle of Wight" disease is no new institution: that it has been endemic in certain districts for years in one form or another, reappearing as an epidemic of noteworthy virulence, intermittently.

Now in this immediate neighbourhood are stocks owned by A, B, C, D, E, and F. A has been a bee-keeper some twenty years. He supplied B and C. B sold to D. E obtained his locally, and F got a stock from Hampshire four years ago. As far as I can ascertain, at least four of these have never been requeened from outside the district: three of the six boast of non-swarming stocks. This may be due to wise management or—otherwise.

All six apiaries developed "Isle of Wight" symptoms this season: three have been practically wiped out, one is even now dying rapidly off, and two others show temporary recovery under treatment. We may consider, I take it, that these are inbred colonies.

All are situated within a half-mile radius of apiary G. This was commenced in June 1910 with a Carniolan queen bred in Sussex. Her progeny in 1910 (a swarm and cast were given off) showed hybrid blood—and vices! In 1911 she was supplied with drone-comb, and the apiary thus flooded with pure Carniolan drones. She went off with an absconding swarm late in the season. By natural swarming the remaining stocks increased to seven.

This apiary now contains ten colonies, boiling over with life and vigour, and without a sign of disease; four of last year's seven hives have been worked with double brood boxes; eleven swarms have been taken—three big ones sold off—with 300lb. of honey up to date, with supers still awaiting removal.

These stocks we may consider cross-bred, with a recent infusion of new blood. Their hives are being treated with "Ayles" as a precautionary measure, and new virgin queens are now being procured from a distance for future breeding.

But the fact remains that while inbred stocks are dying of "Isle of Wight" a hundred yards away, these cross-breds are, *as yet*, sound and healthy.

Evidence upon which to base a legitimate conclusion is not sufficient, but would not the very situation of apiaries on the "Isle of Wight" lend itself to inbreeding? And have we no warrant for suggesting that for a series of years we may weaken our stocks by inbreeding, rendering them in the end too weak constitutionally to resist the attack of *Nosema apis*, a microbe normally in contact with bee-life everywhere?

It would be interesting if your readers could furnish evidence for and against this view.—H. W., Gravesend.

THE HEATHER HONEY QUESTION.

[8519] I have read what Mr. Bullamore says on page 306 with astonishment. It is news to me that a black horse can eat what would prove fatal to a white one.

A man's statements are not questioned by me because he makes a mistake. Huish did not take the wrong side in a scientific controversy. I quoted what he says on page 296, chap. xxi., in his 1815 edition. He knew quite well—as he

shows in this chapter—that empty hives with combs in acted as decoy hives for swarms; yet because he put hives which had died in a dry, cool place till July, and then set them out on stands, he came to the conclusion that they had come to life again because swarms had gone in them. When investigators can make such blunders as these, I say that their statements are of no value. Then again, I quoted what John Keys says in his preface to the 1814 edition respecting Schirach's discovery that bees can rear a queen from worker eggs: had he said he did not believe it as it was too absurd, I would not have said anything to his discredit; but he says he had carefully tested the matter with very many stocks for eight years without a single result in confirmation. I for one do not believe he ever tried it even once on one stock, or he would certainly have found it true, and for making this statement I place no reliance on anything else he says.

Mr. Bullamore quotes "A Lanarkshire Bee-keeper"—Mr. William Thomson—as saying that heather honey was unsuitable for wintering bees. He yearly took his bees to the Leadhills for the heather, but I do not remember seeing him condemn it as winter food. Will Mr. Bullamore please say when and where he said this? I think I have everything he ever wrote to refer to, and I should like to clear this point up, now it has been raised. Neither do I ever remember his friend, "A Renfrewshire Bee-keeper"—McPhedran—ever condemning it as winter stores, and both had large experience for many years. —J. R., Sheffield.

"ISLE OF WIGHT" DISEASE.

[8520] A correspondent has lately, in your journal, endeavoured to trace some connection between wax production and "Isle of Wight" disease. While it may be difficult to reconcile this theory with bee life for the past centuries, it may not be out of place to try and discover if there is any connection between swarming, wax-production, and "Isle of Wight" disease.

The causes of swarming are many and difficult to generalise upon, but issuing swarms are undoubtedly eager to build comb. Again, "Isle of Wight" disease is very prevalent among swarms, and it is probably through their agency that the disease is spread throughout the country. Now, I submit that this disease is conducive to swarming, and is often the direct cause.

A stock of mine this year, which had wintered well, was working on ten frames by April, and in a super in May. The queen certainly was past her prime, but the hive maintained a fair population, although it was never congested.

On June 6th it sent off a swarm, and on July 3rd, when the new queen was making good headway with the brood-nest, "Isle of Wight" disease manifested itself, and I have since ascertained that the swarm succumbed at the same time.

If other bee-keepers can relate similar experiences, I think that it might be advisable to cease to traffic in swarms and to eye with suspicion any stock that may swarm.

Personally, I would rather buy driven bees in the autumn and hive them on diseased combs than prime swarms in May, even if the difference in price were not in my favour. A driven lot so treated last September has this year given me seventy-five sections and 50lb. of extracted honey, and is at the moment perfectly healthy.—E. G. T., Harrow.

"BLURTS FROM A SCRATCHY PEN."

[8521] In many an old church tower, in many a quaint old gable, swarms of bees have hived themselves, grown into powerful stocks, and there remained year in, year out. Even that white-haired, wrinkled old villager, creeping along, bent o'er his stick,

"Sans teeth, sans eyes, sans taste, sans everything,"

cannot remember when first they took possession of their present home. In many a hollow oak and elm as well strong colonies have established their waxen citadels. We all know where such may be found, and if by hazard they have not been spoiled for any length of time vast is the accumulation of honey. When at length some raider, bolder and more cunning than his brethren, with scaling ladder, and for weapon armed with a smoker, does carry off the store, great is the joy of the local "rag," for it affords welcome "copy." The annual "chestnut" of the gigantic marrow exhibited at the local show, or the wonderful pike "our fellow townsman Mr. So-and-So has caught" (and being an angler of course he would not exaggerate). These have been trotted out so often that the readers know the paragraphs by heart. Here, then, is a variation; a nine days' wonder; a bit of news to be headed by big type letters, that other journals less blessed may see, copy, and be envious.

But we are digressing. Let us return to our bees. Usually the entrance to these unconventional dwellings, in tower, in cliff, or in gnarled trunk, is a very small hole or a crack, scarcely perceivable by the passer-by. Will you tell me that it is merely by chance, occurring in the heat of swarming that the vagrants find this cranny, this disused squirrel hole? Absurd! The sporting chances of the event coming off are as ninety-nine is to one. Do they send out scouts? Spies in

advance to seek a new home where they may trek? And why not? Stand by yon sunny bank in early spring and note the queen "bombus," large in body, gaudy but beautiful in raiment, sonorous of wing. See how she peers into every mousehole. And by the oaken fence at the park-side there is a queen wasp gathering the materials to make her paper-like nest. You can hear her mandibles grating against the tough wood. She, too, awakened from her long winter sleep under the eaves of the byre, has been house-hunting, and maybe, as often happens, she has found some defective hive roof where she may (alas! how vainly) hope to raise her piratical horde. If then her cousins so behave, why should not the honey-bee also? They are but harking back to the habits of their ancestors. How often is this noticeable both in the animal and vegetable kingdoms. We study Nature and train plant and creature to a high state. We flatter ourselves that we are touching perfection, but let the restraining hand of man be withdrawn, or, perhaps it would be more correctly expressed, take away that organising power, which is *the* difference between man and inferior animals, and the old savagery re-asserts itself, primeval wildness comes again, and all is once more as it was in the beginning.

But again I wander from my subject. We were considering the question if bees send out scouts. It was with a bee-keeper from South Africa that I was "having a crack" on this point. He relates that often in that country bees are noticed to send out fatigue detachments in advance a party of two or three hundred bees to clear out, spring-clean their future home, to furbish it up and make all spick and span. Never having had the pleasure of voyaging thither I may not contradict. *Perhaps* it is true, but to me it seems that a pinch of salt is a needful condiment to assist in the digestion of that tale. It is admittedly an energetic colony, up-to-date, and no doubt the apicultural world marches with it at equal pace. And if so, why should they stay their hand at interior decoration? Why should they not also ornament the exterior of their hives? Quite in character would be grim arches of Norman design, with battlements and a portcullis. Fit protection against wandering bandits; all truly and properly executed in the hardest of propolis.

And so at length we have the Bill against diseases of bees in front of us. Let others than myself discuss it. Plenty are ready with pen sharpened and dipped in gall for ink to damn it. Fruitless trouble. Will friend Woodley have a shot at it? Can he, and will he, find something new to say; something we have not heard a thousand and one times before? And while on this, may I ask what Mr. Woodley means in his remarks in his previous letter about "Bacillus alvei" and the propagation of "Isle of Wight" disease? I have read and re-read his sentences. I have looked at them from every point. I have even tried to make sense of them by altering the punctuation. What does he mean? Is he clear in his own mind what he wishes to express? Possibly it is that I am so intensely dense. But there, I never was good, and never shall be, in abstract arguments, and Chinese puzzles are a horror to me. Possibly the most simple way will be to give up trying to answer the riddle. It may save me some sleepless nights and anxious days.—J. Smallwood, Hendon.

WASTED NECTAR IN RED CLOVER.

[8522] I think, as Mr. J. N. Kidd suggests on p. 284, it would be better to decrease the length of the tube of the red clover than to increase the length of the bee's tongue. But it would be no use for the bee-keepers to work individually, as Mr. Kidd seems to suggest. It must be an aim carried on through the life and death of individuals, and therefore should be through a society like the British Bee-keepers' Association. I would suggest that a part of the Development Fund be applied to that purpose.

It would be of little use producing a red clover with a shorter tube if it is not *as good* or *better* for the farmer than that supplied by the best seed-growers, so that it will displace all other varieties. This means co-operating with the seed-growers. Other points should be attained at the same time in the interests of bee-keepers, such as early and continued flowering before the plant reaches maturity, and the production of double the quantity of nectar in the florets. I suspect that some of the new varieties of clover, red and white, do not contain so much nectar as the old ones. There is need to look after the bee-keepers' interests, not only to make progress, but to prevent deterioration.

When once a start had been made in this improvement, through the B.B.K.A., bee-keepers should help to carry it on by offering a small sum per acre to farmers for all clover within their reach, or for hives to be set down, as an inducement to the farmer to demand from his seed-grower a variety which is best for the bee-keeper.

Another thing I may suggest for similar co-operation through the B.B.K.A. is the production of a bean superior to all others for the farmer and gardener, with a tube so thin at the point where the bees pierce it that eventually it may have a hole ready-made. Also, I think the nectar of this bean might be easily doubled in quantity. There is no doubt that improved

clovers and beans are the crops of the future, and that they are worth improving in the interests of bee-keepers.—T. T. T., Beverley.

TOADS EATING BEES.

[8523] For some time a large black toad frequented the neighbourhood of my hive. I was informed the toad would consume a large number of bees. The other night I killed the toad, and opened its stomach, and I found it contained only black beetles, commonly called clocks, an insect like a weevil, and a small stone. Do toads really swallow bees?—A. J., Ballindalloch.

[Yes, undoubtedly toads do eat bees. We have seen them doing it.—Ed.].

SCOTLAND AND "ISLE OF WIGHT" DISEASE.

[8524] Permit us a line or two of warning to all bee-keepers. "Isle of Wight" disease has broken out in a virulent form in a large up-to-date apiary in Dumfriesshire, and is also reported to be in Lanarkshire. Any suspected cases should be reported at once to the Board of Agriculture and Fisheries, London, for investigation and report. Any delay may ruin a whole apiary, or even countryside. All bee-keepers, fruit growers, and others interested should also attend the meeting to be held on the 14th day of this month, at 2 p.m., in the large lecture room of the Agricultural College, 6, Blythwood Square, Glasgow, when the work done by, and the aims of, the Scottish Bee-keepers' Association will be laid before them.

Lord Lamington hopes to be able to address this meeting, and some effective steps may be evolved to stamp out this veritable plague which threatens the very existence of bee-keeping.—(Signed) Robert McClelland, Lecturer on Bee-keeping; T. Duncan Newbigging, Chairman of Council, S.B.K.A.

WAX SECRETION.

[8525] Since I posted my letter, in which I mentioned that I saw in a scientific book that bees could not make wax out of sugar alone, I read the book again, and it seems to contradict itself. It reads as follows:—

"Why cannot bees fed on sugar alone make wax?

"Because sugar contains no fat.

"What must be added to assist them in their work?

"A little fat in a convenient form.

"When this is applied, what will be the result?

"They will be able to make plenty of wax."

Then again, I read:—

"What substances beside animals contain fat?

"Fish, vegetables, *sugar*, starch, and indeed almost all foods.

"How do cows and sheep get fat on grass?

"From the starch and *sugar* which the grass contains."

However, a little milk or cream mixed with the syrup we feed a swarm up with might possibly be of benefit—*i.e.*, when we place a swarm in a skep without foundation. I should like to hear what you have to say. Very likely the cast that went off the next morning after being hived took flight without the queen, which must have got hidden in the strawberry bed. After discovering they were without their queen, they returned and flew about the apiary for some time searching for her. When I found her she was hidden under the leaves with a few bees in attendance. That gave them the clue, and soon they all joined her. One hears strange stories about bees from villagers. One old man a short time ago told me that his "Missus," in order to give the bees a treat at Christmas time, placed a salt herring in the skep. A herring of this description certainly contains salt—which bees are fond of—and isinglass as well, besides other chemical properties. A villager also told me it was unlucky to keep an even number of hives, and also to buy a swarm. A hint for me to give him one probably. It has often amused me how afraid of bees cats and dogs are. I have seen a terrier that could worry a hedgehog fly out of my apiary yelping, with a bee on its back, and a cat simply terrified. When once tackled by a bee, dogs and cats will never go near a hive again. I have seen my terrier snap at a wasp, and throw it out of his mouth so quickly that he has not given it time to sting, but the dog evidently knows a wasp as well as a bee has a sting.—Charles Williams.

RANDOM JOTTINGS.

By Charles H. Heap.

In North Berkshire not long ago I met a bee-keeper, who proudly told me that he was born the day after the battle of Waterloo. A little calculation shows that he is ninety-seven years of age. The old gentleman has kept bees for over seventy years, and is as fond as ever of their merry hum. When I made his acquaintance he was sitting upon a low box adding a few rounds of straw to an old skep which he was preparing for an expected swarm. He knew nothing of modern methods, but three or four stocks of bees in skeps induce him to spend almost the whole of fine, warm days in the garden. Sorrowfully, he confessed that he could not lift as well as in years gone by; but up to four years ago he could manage to hive a swarm. He came

of an old bee-keeping family. As far back as he could remember, his mother kept bees, and he believed that there had been bees with the family for a hundred and fifty years. His father, he said, was "a big man among bees," and he well remembered his showing him "the king" and queen. I asked no question concerning "the king" bee, but listened in respectful silence, and heard of the smothering of the bees in the sulphur pit. Old bee-keepers seem to delight in telling us "youngsters" of the ways of the past, imagining, no doubt, that they are recounting something quaint and interesting, but never seeming to realise the cruelty of the old practice. However, it was a pleasure to find an old man nearing a century so devoted to a life-long hobby. I fear, however, that the old man's hobby is going, for "Isle of Wight" disease was in his apiary.

Petroleum as a Protection against Stings.—Who has tried petroleum as a sting preventer? Recently, I called upon a bee-keeper who asked me to help him transfer a stock to a hive which had been treated with Ayles' Liquid. Before we started work, he said: "Do you put anything on your hands to prevent stinging?" "No," I replied. "I do," he went on. "I always wash my hands and arms in paraffin. Try it!" Before I had time to consent or dissent, he seized my hands and liberally daubed them with the oil. I had little faith in the preventive and none at all before I had got the division-board out. The bees defied the nauseous odour and left a row of darts on each hand. I also noticed that the owner of the bees gave his hands and arms a few more vigorous rubs than was consistent with brushing off a fly or two.

"*Tricks.*"—Genius deserves recognition wherever it is found. I recall to mind a bee owner who was the talk and wonder of the bee-keepers in the neighbourhood. It happened to be my duty to call upon him. He politely showed me round his apiary, containing sixteen or seventeen stocks, not one of which was in a frame-hive, though the hives were made to resemble frame-hives. "Come here and see a trick of mine." I went, and was shown a little rack of sections placed over a board, in which two or three slits ½in. wide and 2in. long, had been cut; but the "smartest trick of all" was putting two swarms in a clothes-box, with a dividing-board in the middle, and an entrance at each end. I gently hinted that it would have been better to make proper frame-hives, but the genius was so voluble and enraptured with his "tricks" that my suggestions were wholly unheeded. I was supposed to instruct the bee-keeper, but that was a rôle I was not permitted to play. I suppose geniuses of his kind must have their way.

Mr. Herbert Mace appears to have had the time of his life with swarms this season. Nobody objects to a few swarms except the American gentlemen, who are always asking for non-swarming bees, but leave the work of their production to be attempted by other people. It is, however, possible to have a surfeit of a good thing. Apparently Mr. Mace had more than enough of swarming; but what would he have done if he had averaged 6½ swarms from each stock, as a Berkshire labourer did last year? I can imagine him sitting up late at night engaged in profound mathematical calculations; and finally going to bed lightheartedly, after writing out an advertisement to the "B.B.J." to this effect: "Magnificent. Beat all queens. Defy disease by introducing this vigorous strain into your apiary." When I remarked that it was not wise to hive each lot separately, especially the last teacupfuls, the Berkshire labourer ruefully admitted that he ought to have done something different. It was not much trouble to reckon up his stocks: the number was two, Spring Count.

Sulphur Fumes for "Isle of Wight" Disease.—In Jottings last month, I recounted an experience with diseased bees, in which sulphur fumes appeared to have played a part in curing a case of "Isle of Wight" disease. Let me record the disconcerting fact that the day after the Jotting appeared in print, the well-known symptoms reappeared. An improvement has again taken place, and I have seen nothing amiss for a fortnight. Will history repeat itself?

Queries and Replies.

[8507] *Transferring Bees from Non-Standard Hives.*—In the spring I bought nine stocks of bees in hives 14½in. square and frames 12in. by 7¼in.; they haven't swarmed for several years. I want your advice on what I thought of doing. My intention is to drive all the stocks into standard hives fitted with full sheets of foundation, and feed up with rapid feeder, then re-queen in September. Could I feed them with the honey they have now stored up? I wrote to the Secretary of the Northants. B.K.A. with the intention of becoming a member, but have not received a reply, so perhaps they are not in want of new members, otherwise I would not have troubled you. I may add I have not kept bees till this year. Thanking you,—E. M., Buckby.

Reply.—The better plan would be to allow them to stay until the spring, and then work them down as from a skep, explained on page 149 of "British Bee-keepers' Guide Book."

[8508] *Source of Honey and Supering.*—(1) Do bees gather honey from the bramble blossom, and if so, what is the colour of it, and is it good quality? (2) From the "Bee-keepers' Guide Book," page 58, and also from other writings on bee-keeping, one is led to understand that the sections in the top rack (which are about two thirds full when the second rack is put on) are finished first and ready to come off long before those in the second rack, but this has not been my experience. I have found as many beautifully finished sections in the bottom rack as in the top one. I should like to know if this is the experience of other bee-keepers, or is it my fault? (3) The following may be worth relating: I joined two stocks, and as they were then very strong, I put two racks on right away so as to prevent swarming. When I examined them later for honey the top rack was untouched. In the centre of the low one, the bees had set to work in businesslike style, as about a dozen sections in the centre were finished off completely, while those at the sides were never looked at. What was the cause of this, and does it not teach that one rack at a time, and that done well, is better than two racks of half-finished sections? I shall be glad if you will give me your opinion regarding the foregoing, for which I shall be much obliged.—"Scotia."

Reply.—(1) Yes, it is rather dark in colour. The flavour is generally good. (2) It is not your fault, only a coincidence. (3) Yes, one rack at a time is best, as you have proved. Bees work in the centre first, as it is warmer there than near the outside.

[8509] *Unfertile Eggs and Rearing Queen.*—(1) Can a drone be reared in a worker-cell? (2) Why don't bees store pollen in supers? (3) Will a worker's egg, deposited in a queen-cell, produce a queen if the colony be queenless? (4) Will a bee bring in pollen and honey or wax and honey at the same time? (5) How long should bees be allowed to keep their combs in the brood-nest? (6) How far will a bee fly in search of food, &c.? (7) What is the best way to preserve shallow combs during winter? (8) How many pounds of honey do you consider one would lose each season if they left their bees to produce their own queen when they desired a young one? (9) Would you name a reliable black queen-rearer who advertises in your columns, and requires a reasonable price for them? (10) What would be a fair price to give for a black queen? Thanking you very much in anticipation,—F. Old.

Reply.—(1) Yes. (2) Pollen is usually stored near the brood. (3) No, because it is unfertile. Only fertile eggs laid by a mated queen can produce females. (4) Pollen and honey are brought in at the same time, but wax is made by the bees in the hive. (5) Renew two of the worst combs each year. (6) Two miles. (7) Wrap the boxes in paper with naphthaline, and store in a dry place. (8) Too problematic. (9) We cannot make preference. (10) 5s. 6d.

[We have answered your queries, but *do, please*, read the "British Bee-keepers' Guide Book," which would have answered most of your questions for you.—Ed.]

[8510] *Feeding Driven Bees.*—I have made arrangements to drive eight skeps of bees during the last week of the present month. These I intend to hive on combs of sealed honey. Will you kindly tell me—(1) If two lots united will make a good colony for next year? (2) Would they require the full allowance of 30lb. syrup each (all ready stored in the combs)? (3) Would it be advisable to give them an empty comb or frame of foundation as well as the full ones, so that the queens have room to lay at once? (4) Shall I be right in feeding them gently for a week or ten days immediately after they are hived, or would it be better to pack them up and leave them entirely alone till the spring.—A. V. W.

Reply.—(1) It will depend upon the strength of the lots. You should leave at least 5lb. of bees in each hive. (2) Yes, but you could feed up to this amount if you have not combs with enough stored. (3) Yes, and slow feed. (4) You could feed until the end of September.

[8511] *Glass Quilts.—Wintering Bees on Shallow Combs.—Feeding.*—(1) Is it a good or bad plan to have a square of glass on top of section rack? (2) I have tried to get show sections by putting a swarm of bees on shallow frames with two racks of sections. I am now taking racks off. Can I winter on these shallow frames, or what do you advise? (3) In the district where my bees are kept there is a tremendous lot of humble bees, which visit the flowers early in the morning, all the day long, and late in the evening. In wet weather they are still at it. It occurs to me that if these are allowed to go on, which is only natural, there will be nothing but humble bees about, unless some means are taken to destroy them, as our worker bees only come out in suitable weather, and there cannot be the quantity of nectar in the flowers after the humble bees' visit. I shall be glad to have your views on the subject. (4) Is dry sugar feeding best for winter, or thick syrup?—W. N. C.

Reply.—We do not advise this. (2) Get the bees on to deep combs and feed well. Place the shallow combs above so that the brood will hatch out and not be wasted. (3) Nature provides a balance: you need have no fear on this score. (4) If the bees require food in the winter do not give it liquid, but well made candy.

BRIEF REPORTS, &c., OF THE HONEY SEASON.

Season very indifferent, and varies in districts. Clover crops poor, and on some farms hardly a flower. Honey of good quality. Swarms plentiful.—H. C., Dorchester.

The season in this part of Northants has been very disappointing. Bees did well till the end of May, after that innumerable swarms.—H. C. H. (Oundle).

The honey season opened splendidly in this district, and supers were on quite a month earlier than usual, and at the latter end of May hives were boiling over with bees, when bad weather set in, which continued through June and July, and is worse now than ever—cold, high winds and rain continually. Of course we had a few fine days now and then, and the bees worked those days to some purpose, bringing in honey in great quantities, making it a record year. My take will average 100lb. per hive. A few fine days now would enable the bees to finish and seal up what honey is still on hives, as there is a little heather about.—Robert Eccles, Anglesey.

I noticed in the Bee Journal a few weeks ago the editor invited readers to report as to their honey crop. I may say that about this district they did very well during April and May. I had two and three shallow frame boxes, mostly filled by the first week in June, but sorry to say since then, as the weather changed, they have done but very little in storing surplus. I put a rack of sections on each about that time. I have only two dozen filled out of two hundred. I had no swarms last year. This year they were like Mr. Crawshaw's—kept on swarming after June came in. Even this season's first swarms had the swarming fever, as I had two from them from a dozen stocks. I think they will average about 40lb. per hive.—B. W. G., Glos.

The season here has been good; colonies supered early have done best. My best one, supered with five standard frames at first (afterwards increased to eleven), has filled and capped eleven standards, eight shallows, and twenty-one sections. All are removed and brood-chamber is now getting fit for winter. A swarm hived in a large skep on April 22 swarmed again in early June, and in July hung out to swarm again, but was checked by the weather.—W. G. R., Oxford.

Bee Shows to Come.

August 21st, at Lancaster.—Lancaster Agricultural Society, in conjunction with the Lancashire Bee-keepers' Association. 19 classes for honey, bee produce, and bee hives. Numerous specials, including two silver challenge cups, four silver and bronze medals, smallholder prizes. Write for Honey Schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106.

August 21st and 22nd, at Shrewsbury.—Shropshire B.K.A. Annual Show, in connection with the Shropshire Horticultural Society's Great Floral Fête. Eight open classes for honey. Free entry for single section and single bottle. Schedules from S. Cartwright, Shawbury, Shrewsbury, Hon. Sec.

August 22nd, at Abingtcn Park, Northampton.—Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 15th.**

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules ready July 15th, from G. Hayes, Mona-street, Beeston.

August 28th, at Chester.—The Cheshire Bee-keepers' Association will hold a Honey Show, in conjunction with the Cheshire Agricultural Society. Good classes and prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 16th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4th and 5th, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

September 5th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Judge, W. Herrod, F.E.S. Schedules from A. Wakerell, 22, Mansfield-road, Croydon. **Entries close August 29th.**

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

September 14th, at Dumfries.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in St. Mary's Hall. Five open classes; Three 1-lb. jars extracted 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Schoolhouse, Howwood, Renfrews, N.B. **Entries close September 7th.**

Wednesday, September 25th, at Altrincham.—Eleven classes, four specials. Judges: Rev. T. J. Evans, Rock Ferry, and Mr. T. Johnson, Taunton. Prize list now ready. Prizes, £2, £1, 15s., 10s., and 5s. J. Herbert Hall, 1, Market-street, Altrincham, secretary. **Entries close September 9th.**

Notices to Correspondents.

J. C. (Chorlton).—The comb contains brood of a laying worker.

H. B. (Sussex).—If the bees appear to be all right, and are working, there is no need to kill them, as probably they are cured.

E. F. T. (Cornwall).—Matlock is a good district. The Secretary of Derbyshire Association is Mr. R. H. Coltman, 49, Station Road, Burton-on-Trent.

Crewe.—The honey will do for feeding, but is so thin that you must not add water. Boil it for about three minutes before giving to the bees.

Honey Samples.

J. E. (Sutton).—(1) No. 2 would do to show. (2) In light class (3) No. 1 is from mixed sources: No. 2 from clover. Grading glasses are 1s. 2d., post free.

Blue Seal.—The light-coloured is from clover, and the dark from hawthorn. Both should stand a good chance of winning in their respective classes.

Novice (Worcester).—No. 1: density fair; colour light; flavour good; aroma fair. No. 2: density fair; colour light; flavour good; aroma good. No. 3: density poor; colour medium; flavour fair; aroma strong.

F. J M. (Upton-on-Severn).—The sample you posted first did not arrive till after we had gone to press. It is rather thin, good in flavour, and is from clover and sycamore.

K. C. P. (Erdington).—The honey is a very good sample, light in colour, gathered from white clover.

J. W. J. (Dalkam).—Sample is of good flavour, aroma, and density, and is a nice light-coloured honey.

J. Hunter.—The honey had leaked out of the bottles into the tin, and your letter had to be washed before it could be read. Please send other samples properly sealed and packed, and we will report on them.

Suspected Disease.

W. R. H. (Oxford).—We are sorry to say that to all appearances the bees are suffering from "Isle of Wight" disease. For the sake of the others we should destroy them. You can extract and use the food for human consumption, but it is not advisable.

N. E. F. (Petharton).—It is "Isle of Wight" disease.

H. C. H. (Onndle).—It is foul brood.

W. D. (Birmingham).—We are afraid it is "Isle of Wight" disease.

WEATHER REPORTS.

Westbourne, Sussex.

July, 1912.

Rainfall, 2·16 in.
Above average ·13 in.
Heaviest fall, ·37 on 31st.
Rain fell on 14 days.
Sunshine, 189·9 hrs.
Below aver., 44 hrs.
Brightest day, 15th., 13·5 hours.
Sunless days, 1.
Maximum temperature, 84 on 15th and 16th.
Minimum temperature, 45 on 19th and 31st.
Minimum on grass, 40 on 19th and 31st.
Frosty nights, 0.
Mean maximum, 68·5.
Mean minimum, 54·5.
Mean temperature, 61·5.
Above average, 1·1.
Maximum barometer, 30·241 on 5th.
Minimum barometer, 29·609 on 28th.

L. B. Birkett.

Special Prepaid Advertisements.

SPARE QUEENS.—Several 1912 fertile Simmins' famous White Star Italian strain, 4s. 6d. each, post free, in introducing cage.—J. JUSTICE, Alvaston Hall Gardens, Nantwich. v 9

7½CWT. pure Cambridgeshire Honey, finest quality, 58s. per cwt., in 28lb. tins; sample, 3d.—W. JOCKMAN, Cherryhinton, Cambridge. v 8

SUPERIOR light North Wold Clover Honey, 56lb., 40s.—SMITH, decorator, Caistor. v 6

CHOICE Black Queens, 1912, 4s. 6d., hardy and prolific.—L. NORTON, Cleeve Hill, Glos. v 3

FOR SALE, fifteen to twenty Stocks of Bees, Hives, interchangeable parts; full inspection allowed; what offers?—C. J. ASHWORTH, Heytesbury, Wilts. v 2

WANTED, Honey or Driven Bees; exchange Honey Extractor, geared, English concertina, or Foster Mother, 100 chick.—WILLIAMS, Bees, St. Briavels. v 1

A FEW healthy Nuclei, second swarms, four and five frames, 10s. and 12s. each, 1912 Queens; boxes free.—H. W. GLOVER, Biggin Hulland Ward, Derby.

TWO W.B.C. HIVES, complete, two lifts, 10s. each; two Holborn Hives, 6s. 6d. each; all well painted, 27s. 6d. the lot.—JULIAN LOCKWOOD, Hunstanton. v 23

FOR SALE, a few 1912 surplus Queens, from choice English strains; three 1911 Queens, 1s. 7d. each; wanted, a few good Sections.—CROWE, Central-avenue, Wigston, Leicester. v 21

PURE Cambridgeshire Honey, chiefly sainfoin, light amber colour, 50s. per cwt., on rail; tins returnable; sample, 2d.—J. CUNNINGHAM, Stetchworth, near Newmarket, Cambs. v 20

1912 QUEENS.—A few excellent Fertiles, 3s. 6d. each.—SNELGROVE, Albert Quadrant, Weston-super-Mare. v 14

300LB. light Cambridge Honey, in 28lb. tins, 58s. 6d. per cwt.; tins free; sample, 2d.—J. YOUNGER, 21, Mackenzie-road, Cambridge. v 11

FOR SALE, owing to removal, five strong, healthy Stocks, in W.B.C. Hives, complete, with fittings.—TREHARNE, Creigiau, Cardiff. v 12

STRONG STOCKS, on eight wired frames, ample stores, 1912 Queens, 17s. 6d. each, f.o.r. —WEBB, 61, Alcester-road, Moseley, Birmingham. v 16

PROLIFIC CARNIOLANS, strong 3-frame Nucleus, 11s. 6d.; four frames and stocks in proportion; no disease.—FROST, Hartshill, Stoke-on-Trent. v 17

Editorial, Notices, &c.

ROYAL LANCASHIRE SHOW.

The Royal Lancashire Show at Preston, though much affected by the weather in point of general attendance, was quite a success from the bee-keepers' outlook. Owing to the outbreak of foot-and-mouth disease and the absence of cattle from the show, the committee arranged for extra attractions, and among them the Lancashire expert, Mr. J. Herrod, was engaged to lecture and demonstrate each day of the show on bees and bee-keeping, and despite the mud and dirt consequent upon heavy rains, he held on each occasion an intensely interested large audience for over an hour.

Considering the tantalising summer we have had there was a very fair show of honey. Dr. Anderton, of Ormskirk, and Mr. F. H. Taylor judged the exhibits and made the following awards:—

Twelve 1-lb. Sections (Open).—1st, James Pearman, Derby; 2nd, J. G. Nicholson, Langwathby; 3rd, A. W. Weatherhogg, Willoughton; h.c., Miss F. E. Barker, Dunmow.

Twelve 1-lb. Jars 1912 Honey (Open).—1st, J. Pearman; 2nd, W. Barlow, Knutsford; 3rd, F. W. Frusher, Crowland; v.h.c., A. S. Dell, Leigh; h.c., D. H. Burgess, Sandbach; c., W. Patchett, Cabourne; c., J. Ward, Hesketh Bank; c., R. Morgan, Cowbridge.

Twelve 1-lb. Jars 1912 Honey (Lancs. Only).—1st, A. S. Dell; 2nd, J. Birkett, Blundell Hill; 3rd, H. Finney, Lea Green; v.h.c., J Iddon, Hesketh Bank; c., Dawson Bros., Holmeswood; c., W. Rymer, Hesketh Bank.

Twelve 1-lb. Sections 1912 Honey (Lancs. Only).—1st, A. S. Dell.

Twelve 1-lb. Jars 1912 Medium Honey (Open).—1st, T. Manfield, Newark-on-Trent; 2nd, J. Berry, Llanrwst; 3rd, A. S. Dell.

Twelve 1-lb. Jars Granulated Honey (Open).—1st, H. Finney; 2nd, W. Barlow; 3rd, A. S. Dell, Leigh; v.h.c., Miss F. E. Barker; h.c., D. H. Burgess, Sandbach; c., J. Woods, Church Warsop.

Honey Trophy (Lancs. Only).—1st, A. S. Dell; 2nd, R. Rymer.

Beeswax (Open).—1st, J. Berry, 2nd, W. B. Allister, Throckenholt; 3rd, F. W. Frusher.

Two Shallow or Standard Frames of Honey (Open).—1st, Miss F. E. Barker; 2nd, J. Ward; 3rd, A. Morrison, Preston.

Best Hive (Open).—1st, H. G. Tunstall, Rainhill.

Special Prizes.—1st and 2nd, A. S. Dell —*Communicated.*

CAMBRIDGE MAMMOTH SHOW.

There was an excellent display of honey at the above show, held on Bank Holiday, August 5th, at Cambridge, both quality and numbers being well up to previous years. Although there were exhibitors from all parts of Great Britain, some of them winners at the Royal and other leading shows, the exhibits from Cambridge and Cambridgeshire won the majority of the prizes. The judges were Mr. W. Herrod, F.E.S., secretary and expert of the British Bee-keepers' Association, and Mr. Richard Brown, of Somersham, also an expert of the B.B.K.A. Mr. Herrod also gave lectures and demonstrations with live bees to large and appreciative audiences.

Mr. E. F. Dant again managed the section with conspicuous ability, and the stewards were Messrs. Dant, J. Lee, R. H. Baynes, W. Horspool, F. Humphrey, J. Short, A. Barber, J. Hills, E. Brown, and R. Redmond.

Display of Honey in any form.—1st, R. H. Baynes and Co., Cambridge; 2nd W. Barnes, Exning; 3rd, F. Humphrey, Comberton.

Twelve 1lb. Sections.—1st, W. Barnes; 2nd, E. Brown, Melbourn; 3rd, J. Lee and Son, Fulbourn; v.h.c., W. Hall, Fulbourn, and F. Humphrey.

Twelve 1-lb Bottles Light-coloured Honey.—1st, R. Allen, Tusmore, Bicester; 2nd, A. E. Church, Cardiff; 3rd, W. S. Halford, West Wratting; v.h.c., R. Morgan, Cowbridge, South Wales; h.c., R. H. Baynes.

Three Shallow-Frames for Extracting.—1st, Jas. Lee and Son; 2nd, W. S. Halford; 3rd, E. Brown; v.h.c, S. Sanderson, West Wratting; h.c. W. Barnes.

Six 1-lb. Sections.—1st, W. Barnes; 2nd, Lee and Son; 3rd, E. Brown.

Six 1-lb Bottles of Light-coloured Honey.—1st, B. Stokes, Royston; 2nd, W. H. Halford; 3rd, R. H. Baynes and Co.; v.h.c., F. Humphrey; h.c., W. Barnes

Silver Medal, given by the British Bee-keepers' Association.—R. H. Baynes and Co. *Bronze Medal.*—W. Barnes. *Certificate of Merit.*—R. Allen.

GIFT CLASSES.

To be presented to Addenbrooke's Hospital and the Albert and Victoria Asylums.

1-lb Section special (1st prize by the Hon. E. S. Montagu).—1st, R. H. Baynes and Co.; 2nd, Lee and Son; 3rd, E. Brown, Melbourn; v.h.c., W. Barnes; h.c., E. F. Dant.

1-lb. Bottle Extracted Honey (special 1st prize by the Hon. E. S. Montagu).—1st, R. Morgan; 2nd, W. Barnes; 3rd, W. S. Halford; v.h.c., Mrs. W. Wort, Hatfield; h.c., H. J. Dowsett, Great Thurlow.

For Greatest Number of Points, "Small-holder" Silver Medal.—1st, W. Barnes, Exning; 2nd (bound volume), Jas. Lee and Son, Fulbourn.

HELPFUL HINTS FOR NOVICES.

QUEEN INTRODUCTION.

By W. Herrod.

(*Continued from page* 313.)

In my last hints I mentioned the fact that bees would kill an alien queen by balling if she were not introduced properly. Several beginners have written asking what this means. The illustration (Fig. 1) is an actual photograph of a queen being balled on the floor-board of a hive, the brood-chamber having been lifted off for the purpose of obtaining the picture. It will be noticed that the bees are clustering in a knot round the queen; in this way she is killed by suffocation. Not only so, but I find the workers will

FIG. 1. QUEEN BEING BALLED.

maim the queen, as is shown at Fig. 2, which is the queen taken from the ball shown at Fig. 1. At the end of half an hour mutilation of the wings and legs has taken place, portions of these members having been amputated.

When balling is observed, either on the face of a comb or on the floor-board, remove the cluster. Do not try to pick off the workers, as this is well-nigh impossible without either the queen being killed or a number of stings being inserted in the fingers and thumb of the

FIG. 2. QUEEN AFTER BALLING.

operator. If possible, the ball of bees should be dropped into water, when they will separate; or, it will be just as effectual if the ball is placed on the ground and whipped with a small bunch of long grass; the latter method has the advantage of the material being always ready to hand. In all cases when balling takes place, the queen should be caged alone in the hive for at least twelve hours.

One of the simplest and most inexpensive cages for the introduction of queens is that known as the "Pipe Cover Cage," which is a narrow rim of tin, to which is attached a dome-shaped piece of wire-cloth. The old-fashioned tea-strainer, which is attached to the teapot spout by

FIG. 3. THE WAY TO CATCH THE QUEEN.

means of a couple of wires forced down the spout, and which can be purchased at any ironmonger's shop or penny bazaar, makes an admirable cage when the attachment wires are removed. The manipulation of this cage is very simple if the

FIG. 4. METHOD OF HOLDING PIPE COVER CAGE.

following instructions are carefully followed. Take a post-card and place the cage upon it so that it projects over one edge about $\frac{1}{2}$in. Now catch the queen, and in doing so be careful not to take

hold of the abdomen, or serious injury may result. The best way for the novice to handle a queen is by the wings, as shown at Fig. 3. Grip the wings on both sides and hold on to them; she will not tear them out by her struggles, which is the fear of the beginner the first time he handles a queen in this way. After a little practice she can be taken by the thorax. Put her head over the edge of the card inside the cage, and release her wings. As the natural propensity of bees is to travel up-hill, she runs into the cage. Catch and cage about six workers in the same way; then push the cage on to the card, so that there is no fear of the bees escaping. The next thing is to remove a comb from the hive to which the queen is to be introduced, and for comfort in working it is better to shake it clear of bees. Rear it up, and place the cage and card in position over food, as shown at Fig. 4, holding the card tight to the comb by pressure on the cage. Withdraw the card, and with a

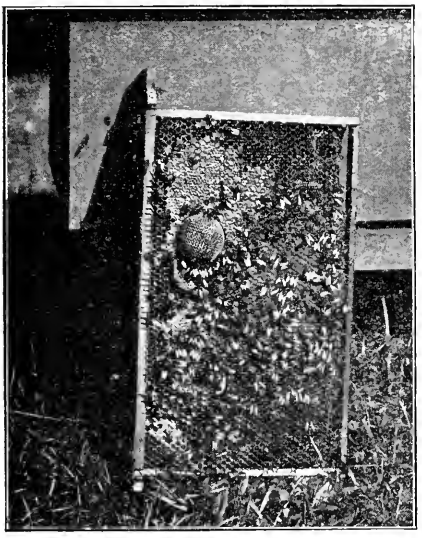


FIG. 5. PIPE COVER CAGE FIXED IN POSITION.

screwing movement force the cage into the comb, so that the tin rim is embedded its full depth, as seen at Fig. 5. Close space a couple of combs in the middle of the hive to give room, so that the cage will not be disturbed by putting in or taking out the comb. The queen can be released at the end of twenty-four hours by lifting off the cage. When this is done watch her for a minute or two to see that she is accepted. If there is the slightest sign of balling, cage her again for a few hours, then release and watch again.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

RENDERING BEES IMMUNE TO "ISLE OF WIGHT" DISEASE.

[8526.] The most hopeful suggestion made by Dr. Graham-Smith and his colleagues in their voluminous report was that bees might ultimately become at least partially immune to *Microsporidiosis*. We are familiar with immunity (say, to small-pox) acquired by the individual; but there is undoubtedly an acquired immunity which is racial, in spite of what Weismann and Thomson may say about the impossibility of transmitting acquired characteristics. For instance, Europeans had acquired a considerable power of resistance to measles, so that an epidemic resulted in only a few deaths. But when measles was conveyed to the South Sea Islands, and its microbes were let loose among the natives, these died off like flies. They had not acquired any power of resisting the disease.

Our problem is to breed a race or strain of bees that will not all die when attacked by "Isle of Wight" disease. Dr. Graham-Smith records that a bee was seen to deposit a mass of excrement, which was found to contain a very large number of spores. But when the bee was slain and dissected, very few spores were found in the chyle-stomach. The doctor suggests that this bee might have got rid of all the spores if it had been allowed to live. Here was an individual bee that was acquiring immunity. But it was a worker, and could not possibly pass on even a tendency to resist the disease.

Obviously, we must bend our energies towards the raising of immunised queens. I have tried some experiments in this direction, which may perhaps be interesting.

Last year I had a stock headed by an American Golden in her third year, which displayed symptoms of *Microsporidiosis*. Individual bees were examined at Cambridge, and found to contain the parasite, yet the stock completely recovered, and I have it still. The old queen died of old age, and the young one is mismated, so perhaps the new generation may not be so resistant; but I would not sell this young queen for a good deal.

But my experiment concerns another queen and another stock. The bees were black, and first displayed symptoms of

the disease on 20th January, 1912. Towards evening of February 29th the few surviving bees were seen to be at the point of death, probably from chill rather than from disease, for only about two dozen were left out of a fine stock. The queen could just move her limbs. I revived her at the fire; and put her in a match-box overnight, along with a few of my immune Goldens. All were chilled by morning, and the queen seemed lifeless. I warmed them into activity once more, put a frame of my immune Goldens into a "Nicolson" observatory hive, and safely introduced the revivified queen, the sole survivor of a stock. This was on March 1st. On the 7th she had laid some eggs on one side of the frame; and next day was laying on the other side. On the 10th a few eggs were hatched, but no further progress was made, and all eggs and grubs ultimately disappeared. Nothing further occurred till April 18th. During all this time none of the bees ever ventured outside, and every cold night some fell benumbed on the floor of the hive. I used to take these out every morning and revive them in front of the fire; afterwards returning them to the hive.

April 18th brought milder weather, the bees first went out, bringing in loads of pollen, and the queen produced more eggs. Next day she was laying on the other side of the comb, and grubs duly appeared on the 22nd. These began to be sealed over on the 26th, and the first bee came out of the cell on May 7th. By May 23rd there were many young bees in the hive; and a second batch of eggs had been laid. In order to hasten the experiment, I now did a rather foolish thing—I attempted to add a tiny queenless lot to this experimental stock. In spite of flour the queen was balled and slain.

Queen-cells were started immediately, the selected queen hatched out on June 5th, was mated on the 23rd, and began to lay on the 25th.

When I left for Orkney, on July 15th, the first bees of the new queen were just emerging, and I hoped for quite a nice little stock when I returned on August 2nd. But alas! the fortnight had been most unfavourable to bees. My strongest stocks had no more honey than when I left, some were almost foodless, and my tiny experimental stock had starved to death. If I had come one day earlier I might have saved them, for one or two could still crawl. I sent the whole stock, including the queen, to Dr. Graham-Smith, so that he could examine—if he cared—for *Nosema apis*. I might say that I never saw the slightest sign of "Isle of Wight" disease in any of the young bees.

I have still got a few of my immune Goldens, and I have a fine stock of blacks exhibiting symptoms of *Microsporidiosis*, so I may be able to repeat the experiment. Any other bee-keeper who may have a stock that has recovered from "Isle of Wight" disease may possibly want to experiment on the same lines, and that is my reason for writing this account.

It is interesting to note that such an experiment will not be possible after the Bee Diseases Bill becomes an Act, and is put into operation. The "expert" will come along to Stornoway, and order all my partially immunised bees to be destroyed, for some of them will doubtless contain specimens of *Nosema apis*. When I think of this, and remember that "Isle of Wight" disease came to this island through the carelessness of an experienced English bee-keeper, I feel like supporting the veteran Woodley in his opposition to the Bill.—J. Anderson, Stornoway.

WASTED NECTAR IN RED CLOVER.

[8527.] Referring to this matter advanced by Mr. J. N. Kidd [8509; page 305] and previous correspondence, and in answer to Mr. Woodley's invitation [8506; page 303], I do not think it at all probable that a cross can be obtained between "white" and "red" clover, as the pollen grains differ greatly both in size and (though in a less degree) in form, as do also the stigmas of these two flowers.

The Alsike is not, as its name implies (*Trifolum hybridum*), a hybrid, or cross between the two clovers; and on this point I believe later agricultural botanists are agreed.

To those who have not studied the subject closely it would seem quite easy to cross, seeing that both are *clovers;* but the characteristics of each plant are vastly different, and it would be just as probable that we should be able to cross white turnips or swedes.

Personally, I do not think we lose *all* the honey from the red clover, for I have seen and examined samples of honey in which it was a predominant factor. Our hive bees are often able to work on it when it has been stunted in growth owing to drought and other causes. They are also enabled to work it when its growth is profuse, for the wild bees pierce the corolla near to the nectary at the foot of the long tube, and our bees avail themselves of this easy access to its sweets.

Neither do I think we need trouble very much about what is wasted from this source, for the honey is inferior to that from white clover, and if gathered in greater quantity it would, I fear, deteriorate a good deal of what we now get as pure white clover honey, seeing that they bloom simultaneously.—Geo. Haves, Beeston, Notts.

SWARMING EXPERIENCES, &c.

[8528.] A few weeks ago I placed a cast in a skep, and the next morning about 9 am. I went to see if the bees were working. Not a bee was stirring; so I peeped underneath and saw the cluster quite still. A few minutes after they all came out and flew out of sight. On waiting a few minutes I was surprised to see them all coming back again. The queen flew about the apiary with the cast for nearly ten minutes, and then dropped in a strawberry bed. I hived them in the skep again, where they have now quite settled down. Another time I was away from home when my gardener was hiving a cast, and just at the time a large swarm issued from another hive; the queen made for the skep, and in went the swarm and united with the cast.

On another occasion a queen took it into her head to pitch under the lighting board of another hive, which caused a great commotion. Out of nine colonies I have had five swarms and four casts this year, notwithstanding I have given the bees ample room. I am now quite overstocked with eleven hives and five skeps, and in consequence of the swarming mania the stores are very much depleted. The swarms have been enormous; on four occasions I could not get them into a skep large enough, but had to put some receptacle on top. By the way, I saw in a scientific book that it was impossible for bees to manufacture wax out of sugar alone, without some fatty substance. If that is the case I should say a little milk or cream mixed with the syrup would help them.—Charles Williams.

TEMPER OF BEES NEAR TOWNS AND IN THE COUNTRY.

[8529.] In reply to W. G. Coates, (page 315) I should like to say that it is a theory only that bees situated near a town or near a path, where people are continually passing, are better tempered than those located in the country, and in actual practice it does not work out this way.

Two years ago I left the town and came to live in the country. Among others, I had a hive of bees which could not be termed good-tempered, even by an enthusiastic beeman, for upon the very slightest provocation they would attack anyone. When I brought out my hives I placed them all about the garden; one was placed just inside the gate immediately behind the hedge dividing the main road from my garden; another stood 90yds. down the garden and away from all traffic; the others were dotted about at different points in between. Now, by ill-luck, this bad-tempered hive was placed nearest to the road. Last season they were so vicious that I dequeened them, and introduced a new queen, which they very promptly killed, and raised for themselves a new queen, and to-day they are a perfect pest. I may say I am not in the least afraid of bees, nor do I mind much being stung, but when I came to lift off three racks of honey the other day their attacks were so bad that in desperation I picked up the hive and carried it right away to an extreme position in the far corner of my garden, and there, after duly giving them my best advice, which was not unmixed with strong words, I left them to go their own way at their own sweet will. In the old position of the vicious hive I placed a nucleus hive, and the flying bees have taken quietly to the young queen, so that in a few weeks I hope to have a strong colony of amiably disposed bees in this very important position.

No, Mr. Coates, I cannot agree with you. My experience proves that vicious bees, like vicious horses, are bad at all times and in all situations, and the only remedy is to dequeen and introduce a queen of a gentle strain; and if by ill-luck she is thrown out, wait a few days and destroy all queen-cells, and then try again. Or instead of trying again, give them a frame of eggs from a hive of gentle-mannered bees and allow them to rear their own, but in this case cut out all the queen-cells, except the biggest, or trouble may occur with casts.—Horace Freeman.

AMERICAN AND EUROPEAN FOUL BROOD.

[8530.] Cannot we reconcile British and American experience of foul brood in this way: *Bacillus burri* of our odourless foul brood and the *Bacillus larvæ* of "American" foul brood are the same, and the two accounts agree as to ropiness and irremovability of the scale. The bacillus of our strong-smelling foul brood and of the "European" foul brood of America is the same, *Bacillus alvei*, but in America the scale is "easily removed." That may be because, perhaps on account of the drier climate, the disease is not associated in America with *Streptococcus apis*, which with us makes the matter pappy and would naturally make the scale "sit tight." The *streptococcus* is no doubt a follower of the real disease, a scavenger, and thus in a measure a beneficent organism, but that would be a matter for future open-minded discussion. The point to-day seems to be that when it gets to work it makes a gluey smell, a pappy mass, and an adhesive scale; and because it is absent in America, the investigators there say the smell is "usually slight and at times sour and the scale is easily removed."—G. G. Desmond.

JULY SWARMS.

"A swarm in July
Is not worth a fly."

[8531.] So wrote an ancient sage, and so also, even at this date, think many bee-keepers of the same school. There may be an element of truth in the saying if applied to the skeppist, but it certainly has no application to the bee-keeper of more enlightened methods.

July swarms, although not always welcomed, may yet be turned to good purpose in various ways, and need not be unproductive of good results even in their first year.

In this neighbourhood we have a number of bee-keepers who have adopted the modern frame-hive as their pattern, without, however, also adopting modern methods of manipulation and practice. The season here is late, and July swarms are of frequent occurrence. These may be purchased cheaply, usually from 2s. 6d. to 5s., and, coming from frame-hives, are of good size. Needless to say, I never refuse one when offered, and they never fail to give a good account of themselves.

Two late July swarms joined together last year, and hived on shallow frames for the brood nest with drawn-out sections above, resulted in not only the brood frames being filled and mostly sealed, but gave a fair amount of surplus when sent to the heather. A 7lb. swarm hived on six standard brood frames, and a rack of sections above, also gave thirteen sealed sections and 6lb. extracted clover honey. This year a swarm of 8lb. weight hived on nine shallow frames has given twenty-two completed sections and several partly-filled ones. The curtailment of the brood-chamber, coupled with the high pressure at which the bees work whilst honey-gathering, may result in their not being quite so strong as the established stocks at the end of the honey-flow. If, however, the brood-chamber is enlarged to the necessary requirements and a little gentle stimulation be used, a nice lot of young bees will be reared, and the addition of a lot of driven bees will put the colony on a strong and sound footing for the winter. Another and perhaps more useful purpose to which these late swarms may be put is that of making nuclei for re-queening our stocks. After dequeening, the bees may be split up into lots of sufficient quantity, and to each may be given a ripe queen-cell. After the young queens have become fertilized, they may be given to those stocks which need them. In this way at a very small cost we may re-queen our stocks with the trifling trouble of simply removing the required number of ripe queen-cells from those of our stocks from which we wish to breed and transferring them to the nuclei. The re-queening being accomplished, these separate nuclei may all be joined together and given one of the queens, or may be used in strengthening other stocks where necessary.

Further enumeration is needless. The crude methods of our forefathers are fast disappearing as science and enlightenment grow apace. Slowly but surely also will the straw skep be discarded. So, likewise, will the saying above be relegated to the limbo of forgotten things.—J. W. Mason, Withernsea.

"ISLE OF WIGHT" DISEASE.—DRIVEN BEES.

[8532.] The letter from "H. W." (page 323), is a thoughtful contribution to the "Isle of Wight" discussion, but his idea does not carry much conviction to me.

In the first place, if inbreeding were the primary cause of disease development we should surely find that those apiaries in which but few hives were kept would suffer most seriously from disease. But, allowing for the more skilled attention which the larger apiaries usually receive, is this the case? Some very extensive bee farms seem to have suffered greatly, notwithstanding every care that could be given them.

Also, I really fail to see that inbreeding is going on any more extensively now than has ever been the case. "H. W." points out that swarms fly right away. Is this so? My own opinion is that they go no farther than they can help and—it being pretty generally agreed that a new location is found, if not before the swarm issues, at least before it recommences its travels after the first clustering—certainly not more than two miles. Against this we have the further fact that, with the great facilities for sending bees about, swarms are constantly being sent from one part of the country to another, creating as complete a change of stock as could possibly be imagined. Certainly much greater than was ever effected in the days when skeps and swarms constituted the entire stock-in-trade of the bee-keeper.

The instance "H. W." gives is certainly not sufficient to even lend colour to the theory. The comparatively recent establishment of the apiary, so far immune, in itself goes far to render its position negative. If I may hazard a theory, I should say the disease was started by the stock from Hampshire, remaining dormant, as it appears to do, until conditions favourable to its development arose. It would be interesting, and certainly very much to the point, to know whether this stock manifested the symptoms first, but even if it did not do

so, it would not be exonerated, for as we understand it the disease may be contracted some time before it displays symptoms. At any rate, the development of the disease in the presumably longer established apiaries may very well have come about by infection from "F.," being assisted by less perfect sanitary conditions prevailing in them than would be the case in an entirely new apiary such as "G." The fact that "G." treats his stocks as a precaution shows him to be alive to danger and confirms my surmise that his apiary is more hygienic. I for one shall certainly be pleased to hear that it comes through the ordeal safely. "H. W." will, it is to be hoped, report again.

I am afraid my experience does not tally with that of "E. G. T." (page 324). I know two apiaries, well-managed ones, which succumbed the season following the introduction of driven bees from Hampshire.

I cannot agree either with the contention that it is cheaper to buy driven bees than swarms. Of course, if one's time is of no value and one can go round and drive the bees for nothing, or next to it, they may work out cheaper, but if one buys two driven lots, costing about 8s., spends something like 3s. on sugar, risks all the dangers of winter and spring, receiving no return for about nine months after the outlay, I think the investment of 15s. on a May swarm, which will refund its outlay within a few weeks is more economically sound. Only when one wishes to increase rapidly do driven bees appear to be cheaper.

I can certainly add my testimony as to toads eating bees (page 326), for I also have seen them eat dead ones. I do not think they need cause alarm. Feeding only at night, they are not likely to get many sound live bees. In fact, by clearing up all the dead ones in the vicinity of the hives, it is very probable they serve a most excellent sanitary purpose.—HERBERT MACE.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Heather Honey as Winter Food (page 261).—I think D. M. M. raises a new point here. Admixture with other honey may make a difference, both as to date of granulation and suitability for wintering.

Heather Honey for the Table (page 261).—Whatever we heathermen may say, there is no doubt that Southerners do not all appreciate this glorious honey. To them it appears, after acquaintance with the milder summer honeys, to have a bitter or rough flavour. It is possible that this bitterness is not inherent, but may be due to the crowberry or crow ling, which occurs upon some moors at the same time in some seasons. But it is evident that those who do like heather honey like it very much, judging by the enhanced price they are willing to pay for it. It may be that a taste for it is acquired, as with many other delicacies, so that it is "up against us" to educate these lowlanders. May more of them spend their holidays in Banffshire.

Increase (page 274).—As I understand this plan, a queen is reared from the egg in a three-frame nucleus. I have not had satisfaction out of this easy method, and it is not approved by some experienced breeders. Such queens are not, I think, "the best," and I tolerate no queen reared other than leisurely in a strong colony. May I suggest a modification of the plan? Stimulate the strongest colony until it casts an early swarm. Re-arrange and distribute the cells upon the combs, and return the swarm minus the old queen, who may be housed in a nucleus. A week later break up the stock into nuclei. Some eight hives or so are thus provided with young queens quite early in the season, with the minimum of disturbance.

Temper (page 275).—It is possible that the good behaviour of the Metropolitan bees is a protest against suffragette tactics, whilst the drone attack recorded by Mr. Smallwood is an assumption of the rights of the male armour—shield, buckler, and sword—by the drone? It is an interesting case. Has anyone experienced the like? Is there other evidence that the drones takes an intelligent interest in the affairs of the community, and is not merely the lazy glutton he has been styled? I have had painful blows in the face, but merely thought them the result of blundering flight. No doubt a feature of the attack is the terrifying noise made by the hurly-burly drone. There has been a distinct improvement in the temper of my bees since I posted the following notice in the apiary for the benefit of the German, Carniolan and Italian bees, "*Steehen verboten*; *Defense d'afficher*; *Fidei defensor*." An unlicensed translation of which would run, "Attack in good faith and self-defence only."

Bee Experts not Workmen (page 282).—Of course that is speaking technically, for only those who have undertaken the duties of expert know the amount of work involved. "Workman" appears to be a much abused term. Our sympathies may be extended to Mr. Edwards in his unfortunate case. I know no more of the merits of this than are disclosed by the report, but the anomaly would seem to be that an Insurance Company is willing to accept premiums from a Bee-keepers' Association on account of experts

employed, but unwilling to accept responsibility upon technical grounds. Associations would do well to note.

Weight of Bees (page 282).—Calculations as to the weight of honey carried by a bee are possibly affected by the bowel contents. Thus it is possible that a bee having a full honey sac may have voided the contents of the bowel, whilst a resting or empty bee taken from the hive may still retain them. So that the load may be larger than estimated, and the number of bees required to gather a definite quantity proportionately less. Calculations made from small numbers are, of course, more liable to error, but on the other hand, large numbers give an average result only. The practical bearing of the question would seem to be that bees should be within the best flight distance of the source of supply, so that the number of journeys per diem may be as large as possible. Have observations shown the relation between the number of such journeys or the time occupied in them and the consequent fatigue and rest period?

Drone-cell Supers (page 283).—A point which has been mentioned in favour of drone comb was that pollen was never stored therein. I have before me a piece of worker and drone comb, in which the pollen is solidly packed across the two sizes. Another popular error about the drone is that he does not feed directly from the comb. I have seen him do so, and whilst it is possible that he cannot reach the bottom of an ordinary worker-cell, yet he can bury himself up to his shoulders. Reverting to the subject of pollen, which troubles me, I have again had sections above excluder-zinc spoiled. The loads, largely reduced by the excluder, have been kicked off into cells partly full of honey, both drone and worker size. These pellicles appear as smears in the honey, honey being added above them, so that the only thing to do is to allow the bees to clear the honey out. This trouble, and the excessive swarming of the year, determines me to fit each hive with a swarm-catcher. Needless to say, I am requeening such stocks as play these undesirable tricks.

Red Clover (page 234).—From time to time desire is expressed for a shorter calyx, but to what good end? By the way, should this not be "corolla"? For my own part, I trust that its success will equal that of the attempt to acclimatise the savage *Dorsata*. Red clover honey is inferior to that of the clover we know, and if we could succeed, much beautiful honey might be spoiled. Samples may be obtained from the nests of the humble bees, and I think that the inferiority of this honey has been recorded by the Roots of America.

Queries and Replies.

[8512.] *Uniting Driven Bees.*—Will you kindly give me your advice on the following, through the BRITISH BEE JOURNAL:—I am going to drive two stocks of bees for a "skeppist," and am having the bees in return. I want to unite them, and put them into a frame-hive to form one colony, but have been told that to do this one of the queens must be removed. I have driven a few lots before, but have only seen the queen once, and am afraid of missing her this time. The method described in the "Guide Book" of putting both lots into a bag, apparently both queens being with them, seems an easy way out of the difficulty, but is this way quite effective? Is there not a danger of the bees fighting and both queens being injured?—W. S. H.

REPLY.—You should drive one lot of bees first. Then carefully remove the skep containing the driven bees, keeping it the right way up, so that the bees are not dislodged; fix it on to the second skep in the usual way, and drive the bees up to the first lot. You will thus unite the bees without any danger of them fighting. If you can catch one of the queens as she ascends, do so; if not, it will not matter, they will fight it out. The chance of both being killed is a very remote one.

[8513.] *Transferring and Feeding Bees.*—(1) Would you kindly let me know, through the columns of the "B.B.J.," if the following would be the proper course to adopt:—I commenced bee-keeping this year early in April, with one hive, which gave me a swarm in June, which I put into a new hive *not* painted. Would it in any way do harm if I got another hive, already painted, and take bees from the unpainted one and put them in the new one, as I am afraid the wet will rot the one not painted, apart from any harm the damp may do to the bees? (2) Would you also kindly give me a reliable recipe for bee-food, and state when I should commence feeding.—D. W. Y., Harborne.

REPLY.—It will be quite all right to transfer the bees. (2) Recipes for bee food are given on page 197, "British Bee-keepers' Guide Book" (we have not room to reprint in these columns). If the bees require food you should commence at once.

[8514.] *A Novice's Queries.*—Would you be good enough to reply to the following questions in the BEE JOURNAL:—(1) I bought a stock of bees last month for 30s. Would that be considered a fair price? (2) Being at work all day, I shall not be able to watch the bees in the swarming season. What precaution can I take so that I do not lose any swarms that may

issue? (3) Is it best to use queen-excluder zinc or not? (4) Is it possible to return a second swarm to the parent hive; and which of the queens should be left? (5) How long is it possible to keep a swarm in a skep, and how should it be done?—D. G. N.

REPLY.—(1) The price seems about right, but it is difficult to say without seeing the stock. (2) Give room in advance of requirements by means of supers and also provide bottom ventilation of the hive. (3) Yes. (4) Quite possible. It does not matter which queen is left as both will be virgins. (5) This question is not quite clear, but if your meaning is how long you can keep the swarm in the skep before hiving it into a frame-hive, then the answer is, not longer than the evening of the day on which it issued. The bees will stay in the skep if it is put on a board on the ground near the place where they clustered, and propped up about 4in.

[8515.] *Dividing Stock by Means of Division Board.*—A stock of bees having swarmed, it was removed to a new position, the swarm being placed on the stand previously occupied by the parent hive. The latter having frames running from front to back, was separated in the middle by a thin division board, and a strip of wood along the entrance gave a contracted entrance at each front corner of the hive. There were queen-cells on either side of the division board. In due time, when examined for eggs, both eggs and brood were found on one side, while neither were seen on the other side; and the bees seemed fewer in number than previously on that side of the central division board. Assuming that at least one queen hatched out in each compartment, did they by some means gain access to each other? or is it more probable that one of the queens when starting on her mating trip was accompanied by the bees from her side of the hive, thus forming a kind of cast?—GLOUCESTERSHIRE BEE-KEEPER.

REPLY.—The bees must have had access to both sides, either through faulty fitting of the division board, or by the entrances being too close together. A cast did not leave the hive as you suggest.

[8516.] *Chief Sources of Honey.*—I suppose that we may take it for granted that the four chief sources of honey (heather excepted) are fruit blossom, clover, sainfoin, and lime? Could you kindly state the colour of the honey from each, and give their proportionate value in honey, &c.—YORKS, BEE-KEEPER.

REPLY.—1, Fruit blossom: honey value 70 per cent., pollen 60 per cent; colour dark. 2, Clover (white or alsike): honey value 100 per cent., pollen 30 per cent; colour light. 3, Sainfoin: honey value 75 per cent., pollen 10 per cent.; colour light. 4, Lime: honey value 100 per cent., pollen 30 per cent.; colour green tinted.

Bee Shows to Come.

August 23rd and 24th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona-street, Beeston.

August 28th, at Chester.—The Cheshire Bee-keepers' Association will hold a Honey Show, in conjunction with the Cheshire Agricultural Society. Good classes and prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 29th, at Bruton, Somerset.—In connection with the East Somerset Agricultural Society, the Castle Cary and District Beekeepers' Association will hold a show of honey and bee produce. Good classes and prizes. Schedules from R. Litman, South Street, Castle Cary. **Entries close August 24th.**

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4th and 5th, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

September 5th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Judge, W. Herrod, F.E.S. Schedules from A. Wakerell, 22, Mansfield-road, Croydon. **Entries close August 29th.**

September 10th, at Woodstock.—Honey Show of the Oxford B.K.A. Open classes for single 1lb. jar of honey, and 1lb. section. Exhibits to become the property of the Association. Entry free. 1st prize, 7s. 6d.; 2nd, 5s.; 3rd, 2s. 6d. Schedules from H. Turner, 4, Turl-street, Oxford.

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

September 14th, at Dumfries.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in St. Mary's Hall. Five open classes; Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Schoolhouse, Howwood, Renfrews, N.B. **Entries close September 7th.**

Wednesday, September 25th, at Altrincham.—Eleven classes, four specials. Judges: Rev. T. J. Evans, Rock Ferry, and Mr. T. Johnson, Taunton. Prize list now ready. Prizes, £2, £1, 15s., 10s., and 5s. J. Herbert Hall, 1, Market-street, Altrincham, secretary. **Entries close September 9th.**

Notices to Correspondents.

RIVER AXE.—It is the queen piping.

KUTTA (St. Asaph).—*Utilising Old Syrup.*—(1) The syrup has two faults: it is too thin, and too much spirit has

evidently been used to dissolve the *N beta* when medicating it. (2) Your sample of honey is light in colour and quite suitable for showing, as it is good in flavour, aroma, density and brightness.

Suspected Disease.

L. A. N. (Wilts).—Sorry to say it is foul brood.

Honey Samples.

RADNORIAN.—Sample No. 1 is from fruit blossom, and of good quality. Value retail 10d. per lb. No. 2 has been gathered mainly from clover. Quality good; worth about 10d. per lb. retail.

RIVER AXE.—The honey is of medium quality mainly from hawthorn.

HALFACRE.—The honey is an excellent one from clover. It is especially good in density and flavour.

S. S. (Cambs).—No. 1 is from privet. No. 2 is from sainfoin; it is too light for the medium class.

A. F. W. (Pinwall).—The honey is good in all points except density, which is only fair. It is worth a trial on the show bench in the light class.

J. B. N.—The best for show in open competition is No. 2. No. 4 is from clover and sycamore. Nos. 1, 2, and 3, are worth 9s. 6d. to 10s. per dozen jars; 60s. per cwt. in bulk. No. 4, 8s. to 9s. per dozen jars; 50s. per cwt. in bulk.

BARNWOOD, GLOUCESTER.

July, 1912.

Rainfall, 7·07in.
Above average, 4·62 in.
Heaviest fall, 1·15in. on 27th.
Rainfall on 19 days.
Total to date, 25·18in.
Last year for same period, 8·33.
Mean maximum temperature, 70·1; 2·9 below average.
Warmest day, 15th, 88.
Mean minimum temperature, 54·2; below average. ·8 of a degree.
Coldest night, 8th, 44.
Mean temperature, 62·1; 1·9 below average.
Percentage of cloud at 9 a.m., 69; ten mornings overcast, three cloudless.
Prevailing winds, N.E. and S.E.
Percentage of wind force, 18.

Barometer, daily mean, 29·8, reduced to sea-level; highest, 30·3 on 15th; lowest, 29·38 on 31st.

Relative humidity, ·78.

Remarks.—A month of "patchy" weather. Bees were flying nearly every day, and were especially busy during the heat wave from the 10th to the 17th. The abnormal rains from the 26th onwards hindered work greatly. A saving clause in the month's weather was the warmth of the nights. Sunshine was more deficient than in June.

F. H. Fowler (F. R. Met. Soc.).

Special Prepaid Advertisements.

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 344

PURE LIGHT CAMBRIDGESHIRE HONEY, sections, 8s. 6d. dozen; screw top jars, 8s. 6d. dozen; 28lb. tins, 63s. cwt.; sample, 3d.—C. P. HAWKES, The Cambridgeshire Apiary, Swaffham Prior, Cambs. v 54

WANTED, Extractor, geared, good condition, must be cheap for cash.—HAILES, 28, Highfield-lane, Southampton. v 58

HONEY, Extracted, 56s. per cwt., on rail March station; empties returnable; sample, 2d.—PEPPER, Guide Post, March. v 59

WHAT OFFERS in exchange for 100 good, strong, Chapman's Honey Plants?—LAURENCE, Bee Farm, New Buckenham, Attleboro'. v 53

HONEY IN SECTIONS, first quality, 10s. doz.; second quality, 7s. 6d. dozen, packed.—F. COUSINS, Misterton, Gainsboro'. v 50

LIGHT CAMBRIDGESHIRE HONEY, finest quality, 60s. cwt.; 7lb. tins, 5s.; 28lb., 17s. 6d.; sample, 2d.; 5 cwt. orders carriage paid; 2 cwt. Light Beeswax, 1s. 8d. lb.—APIARY, Fordham Abbey, Cambs. v 51

GEARED EXTRACTOR, in good condition; also six dozen drawn out Shallows; what offers?—L. W. MATTHEWS, Great Rollright, Oxon. v 52

WHAT OFFERS for seven strong Stocks of healthy British Bees, each on ten standard frames, in standard frame Hives, with sufficient stores for wintering? also Supers, Clearers, Excluders, Swarm Catchers, Lifts, Swarm Boxes, &c., a complete Apiary.—Apply, G. H. COCK, Ridgebourne, Shrewsbury. v 43

ALL BARGAINS.—Skep of Bees, May swarm, 12s. 6d.; Browning Pistol, new, 50s.; two disc Gramophones, new, 20s. each; English Lever silver Watch, 30s. Whisky Flask, pewter top, 5s.; Sewing Machine, new 45s.; a written guarantee with all above, and all post free.—P.O.'s to GROOMBRIDGE, White House, Foot's Cray. v 42

FOUR dozen well-filled Sections, glazed, 9s. 6d. dozen; 120 1lb. jars, 8s. 6d. dozen; 2 cwt., in 28lb. tins, 6d. lb.; sample, 2d.—CUTFORTH, hairdresser, Oakham, Rutland. v 40

EXTRACTOR, not geared, in good condition, takes two frames at once, 9s. 6d.—WILSON, Parkdale, Churchfields, Woodford, Essex. v 36

FOR SALE through removal; three W.B.C., one Holborn, one Beatha'l, Hives, stocked with Bees; shallow Frames and Section Racks, Meadow's 50s. Extractor, Smoker, Knives, Feeders, Wax Extractor, £10 the lot.—Particulars from AVERY, Barclay's Bank, Northampton. v 39

THREE Stocks of Bees for sale, in good Hives, guaranteed healthy and stored for winter, price 25s. each.—HANSON, 24, Triangle, Ilkeston. v 37

EXCELLENT EXTRACTED HONEY, light colour, and nice flavour; also Sections for sale, cash or deposit; sample, 3d.—DAVID HANCOX, Deddington, Oxon. v 47

EXTRACTED HONEY, finest quality, about 1cwt., in 28lb. tins, 60s. per cwt.; tins and crates to be returned. — LYALL, Tangley, Andover. v 29

FINE CLOVER HONEY, in 56lb. tins, 56s. per cwt.—EXPERT, c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 35

WANTED, Pure English Honey, 2cwt. lots, for wholesale trade.—Samples and lowest price to BRETT, 5, Brunel-street, Cardiff. v 27

Editorial, Notices, &c.

HITCHIN AND DISTRICT B.K.A.

The second show of the above association was held at Hitchin in connection with the August Bank Holiday fête. The entries exceeded those of 1911, although the season is poor compared with last year. During the afternoon Mr. G. W. Bullamore and Mr. P. G. Russell gave lectures and demonstrations of bee-keeping in the bee tent, and great interest was shewn by the visitors in the observatory hive exhibited by Mr. J. Cooper. The judges, Mr. Geo. J. Buller and Mr. P. G. Russell, both of Hitchin, made the following awards:—

Six 1-lb. Sections.—1st, J. Day, Kings Walden; 2nd, A. Prince, Letchworth; 3rd, P. Peters, Hitchin; v.h.c., W. Burr; h.c., E. C. Willmott, Hitchin; c., F. W. Armstrong.

Six 1-lb. Jars Light Honey.—1st, J. Day; 2nd, E. E. Wiggs, Hitchin; 3rd, R. Stapleton, Holwell; v.h.c., W. Burr; h.c., S. Carrington, Hitchin; c, P. Peters.

Six 1-lb. Jars Dark Honey.—1st, W. Burr, Apsley End; 2nd, F. W. Armstrong, Three Counties Farm; 3rd, Mrs. Greg, Buntingford.

Two Shallow Frames for Extracting.—v.h.c., P. Peters; c., A. Prince.

Special for Highest Number of Points Gained.—W. Burr.

Second Special.—J. Day.—J. Cooper, Hon Sec.

WORCESTERSHIRE B.K.A.

The annual show of the Worcestershire B.K.A. was held at Madresfield, Malvern, on August 8, in connection with the Agricultural and Horticultural Show. The quality of the exhibits was well up to the average, though the number was somewhat below that of last year, owing doubtless to the unfavourable weather in June and July. The silver and bronze medals of the B.B.K.A. were won respectively by G. Richings, Worcester, and W. J. Woolley, Evesham. The President of the Association (Rev. Canon Coventry) and Dr. W. E. Moore Ede acted as judges, and made the following awards:—

Display of Bee Products.—1st, G. Richings.

Twelve 1-lb. Sections.—1st, G. Richings; 2nd, W. J. Woolley.

Six 1-lb Sections.—1st, Miss Holt, Broughton Hackett; 2nd, W. J. Woolley; 3rd, Jos. Price, Old Hill.

Twelve 1-lb. jars Extracted Honey.—1st, Jos. Price; 2nd, C. Cookson, Hagley; 3rd, H. W. Taylor, Earls Croome.

Six 1-lb. Jars Extracted Honey (Members Only).—Equal 1st, H. W. Taylor and C. Cookson; 3rd, T. Maylett, Trotshill.

Six 1-lb. Jars Granulated Honey.—1st, Jos. Price.

Shallow Frame for Extracting.—1st, P. V. Leeke, Leigh; 2nd, Jos. Price; 3rd, W. J. Woolley.

Beeswax.—1st, Jos. Price; 2nd, G. Richings.—George Richings, Hon. Sec.

SCOTTISH B.K.A.

A public meeting for the furtherance of the aims and objects of the recently formed Scottish Bee-keepers' Association was held on August 14, at the West of Scotland College of Agriculture, Glasgow.

Dr. T. Duncan Newbigging, Abington, Lanarkshire, chairman of Council, presided over a large attendance. Many letters of apology for absence were read, all of which expressed a wish that the association should be successful. Lord Lamington wrote: "I agree it would be a great thing were the industry more generally engaged in, and I hope the association may be successful in furthering their aims and objects and in warding off the ravages of disease."

The Chairman remarked that they were living at a time of great danger to the science and art of bee-keeping, and one of the main purposes of the association would be to take preventive measures in dealing with disease. He appealed for membership—an appeal which was immediately responded to, many new members being enrolled. He then inaugurated a discussion on "Isle of Wight" disease, emphasising the need of a powerful association which the Board of Agriculture for Scotland and the various Colleges would be glad to consult with or be guided by.

Dr. Newbigging also emphasised the need for "quickness" on the part of the authorities in dealing with reported and suspected cases—"power to act and speed in acting."

The Rev. Mr. McClelland, Inchinnan, who spoke in support of the association, said they would need to procure some means whereby bee-keepers, even when suspicious of disease, would be put in touch with an expert who could inspect the apiaries and give advice. There was great mystery and difficulty about the disease, and they must, as an association, do all they could to deal with the trouble effectively. They must, he said, also support the Chairman in his ideal of a "truly national association."

The Rev. Samuel Lyle Orr; Mr. Manson, Dumfries; Mr. Cunningham, Stirling; Mr. Avery (Secretary), Mr. Steele, Newburgh, and others contributed to the discussion, to most of whom Dr.

Newbigging replied. The importance of such a meeting and discussion can only be estimated by those present. Dr. Newbigging then brought forward a motion to the effect that it be recommended to the various Colleges and to the Board of Agriculture for Scotland by the association and this meeting, that effective steps be immediately taken to deal with bee disease by the attending of experts and otherwise. This was seconded by the Rev. M. McClelland, and carried unanimously.

Dr. Newbigging proposed a vote of thanks to the College for the use of the room. The meeting was brought to a close by a warmly expressed and warmly received acknowledgment of the indebtedness of the association to Dr. T. Duncan Newbigging, who, Mr. McClelland said, was the "engine," "the driving power" in the association.—COMMUNICATED.

BRITISH BEE-KEEPERS' ASSOCIATION

LECTURE BY F. W. L. SLADEN, F.E.S.

Readers will be interested in the leaflet enclosed in "B.B.J." this week, as in it the British Bee-keepers' Association announces the first of the lectures by eminent specialists to be given in the Lecture Hall of the Zoological Society at Regent's Park during the winter of 1912-13.

The occasion will be an especially interesting one, as the lecturer, Mr. F. W. L. Sladen, is leaving this country on September 12 for Canada, to take up his duties as Assistant for Apiculture to the Dominion Entomologist there. It is hoped that all bee-keepers able to be present will take this opportunity of hearing one of our most talented apiarists on a subject which he has studied more thoroughly than any one else in this country. "Mendelian Methods applied to Apiculture" is a subject of great importance to bee-keepers, and no one is better qualified than Mr. Sladen to deal with it, as he has applied the principles in his own successful queen-rearing business for several years.

We hope, in view of the fact that this will be the last occasion for some time that this distinguished young bee-keeper will have an opportunity of being among his fellow members, that there will not be a vacant seat in the hall on September 10, the date of the lecture. We can all show by our presence that we are proud of him and wish him well in his new home.

No tickets are required for admission to the Lecture Hall, and the proceedings will commence at 6.30 p.m. All interested in bee-keeping, whether members or not, will be welcome.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8533] The weather in this district has been very unsettled for the past fortnight, and the temperature extremely low for harvest time. There is, however, an abundance of late flowers in the fields and pastures, and a month of fine, warm weather would be a godsend not only to the farmer but to the bee-keeper also, as then our bees would be able to lay in a store of honey for winter food. I notice that the new grasses are a good crop. Last dry season the grass leys were dried up and killed. This season they are growing well, so that we can hope for a good forage ground in 1913.

Writing of the year to come brings us to the fact that this month—in the south, at any rate—is the one in which we lay the foundation of the following year's successful bee-keeping by getting our bees into good order for wintering, *i.e.*, having our stocks headed by young queens in strong colonies on good, new, straight, well-stored combs. By new combs, I do not mean that they should be of this year's building only, but of the last three or four years. These can always be provided if two sheets of wired foundation are inserted in each stock every season, say in May. This is most easily done with "Combination" hives, which have the frames parallel with the entrance. The old combs to be removed can be placed behind the dummy, the latter having a bee way cut in the bottom to give bees access to the combs to clear out any honey left in them; or if a very prolific queen heads the colony the whole of the combs may be left, giving a rousing colony which in a good season, like 1911, would surprise you by the big take.

Requeening.—The present extra breeding season has induced many stocks to requeen themselves, and it will be a waste of money to purchase 1912 queens to replace 1912 queens unless a special strain is wanted. In recent issues the BEE JOURNAL has recorded the vagaries of bees during the last three months. I myself have had casts from stocks that have not swarmed; at least small swarms headed by virgin queens have issued. It is many years since such a thing occurred in my apiary. In buying queens make a stipulation that there is no disease, especially

"Isle of Wight," in the apiary or the village from which they come.

Driven Bees. — This precautionary remark applies especially to driven bees. I trust BEE JOURNAL readers will not send out driven bees from villages or apiaries where "Isle of Wight" disease is or has been known to exist during the season. I know the loss of the sale of driven bees means a restricted profit on the year's working, but the chance of sending "Isle of Wight" disease into other districts now free from the plague is likely to cause a hundredfold more loss to the purchaser and his neighbours. If there is any doubt on the point, put them over the brimstone pit. It will be a saving of time which will, in a measure, compensate for much of the loss suffered. As an alternative the driven bees can be built up into stocks, which if healthy and strong will in spring always find a ready sale.—W. WOODLEY, Beedon, Newbury.

TEMPER OF BEES; AND RACIAL IMMUNITY FROM DISEASE.

[8534] Is it not possible that the amiability of town bees noticed by Mr. Smallwood is due to the elimination of the unfit? Anyone keeping a vicious stock in a suburban garden will be liable to complaints—and possibly lawyers' letters—from his neighbours. He will, therefore, probably get rid of the bad-tempered bees, or improve their temper by requeening. Consequently, the drones flying in a thickly-populated district will for the most part come from docile stocks; so that the tendency in such a neighbourhood will be towards the maintenance of a good-tempered race of bees. In the country, on the other hand, a bee-keeper who chooses to keep vicious stocks has only himself to consider, as his neighbours are not, as a rule, near enough to suffer.

This process of "natural selection" comes in also in the case of a stock situated near a frequented path. If the bees are of the kind that allow no one to pass unchallenged, they are sooner or later banished in disgrace, as were Mr. Freeman's (page 335), to a remote corner of the garden; only those stocks which are good-tempered being allowed to remain in such situations. Moreover, if a stock is close to the house it is liable to be examined more often than those in more distant parts of the garden. Now it will, I think, be admitted that the temper of a stock depends on the proportion of bad-tempered bees in it. If the hive is opened frequently, on each occasion perhaps three or four short-tempered individuals sting the operator or his clothes, and are thereby eliminated. The one or two stings pass more or less unnoticed, and the stock gets a good name as regards temper. On the other hand, when a stock is not examined for some time, irascible bees accumulate; on the hive being opened, out they come in a body, and trouble ensues! The individual bee lives for so short a time that one can hardly believe that the quietness of a much-handled stock, or one near a path, is due to "habit," particularly as bees seem to be creatures of inherited instinct rather than possessed of personally-acquired knowledge of their surroundings.

While on this subject, is not "natural selection," taken together with chance variations in the direction of resistance to disease, an adequate explanation of racial immunity? To take Mr. Anderson's illustration (page 333), surely the European immunity from measles arises not from the transmission of acquired characters (which, at best, is "not proven"), but from the simple fact that only those strains which vary in the direction of immunity can survive; all others tend to die out, owing to heavy infant mortality.

Thanks are due to Mr. Anderson for raising the question of the destruction of partially immune bees under the Bee Diseases Act. I am a whole-hearted supporter of legislation, but hope that discretion will be exercised in this matter; as the breeding of an immune race of bees seems our only hope, if the conclusions reached by Dr. Graham-Smith and his colleagues in their report are correct.—ANNIE D. BETTS.

ROSS-SHIRE NOTES.

[8535] While Southern bee-keepers report good and in some cases record crops, we in the North must class 1912 as one of our "off" seasons.

June was a complete failure, and bees had to be fed all the time, while the weather of July was most erratic and minus the steady flow necessary to ensure rapid filling and sealing of supers. So when the time for removal came it was found that stocks strong enough to occupy and store in three racks had not more than twenty sections sealed over.

August arrived accompanied by hard frost, and with an ominous coating of snow on the mountain tops—after that the deluge. The month was, if possible, worse than June, but bees and bee-keepers are nothing if not optimistic, and hope revived when the 23rd day of August was actually dry, without a drop of rain from morn to eve. The next day was dry, also warm, a faint perfume of heather honey filled the air, and after weeks of idleness the apiary boomed.

It was a real bee-day, and I had a busy time contracting brood-chambers and reducing each stock to a single super. Just in the thick of the fray there arose

a loud droning sound overhead, and there, a mile above me and my honey-gathering aviators, flew the *Daily Mail* aeroplane from Strathpeffer. All ordinary individuals had gone across to see this wonder, but bee-men are proof against counter-attractions where their craft is concerned. However, after all, I had the pleasure of seeing the first aeroplane in the Highlands make its initial flight in the Ussie Valley, and after a double circuit swoop gracefully downward and over the hill to Strathpeffer Spa.

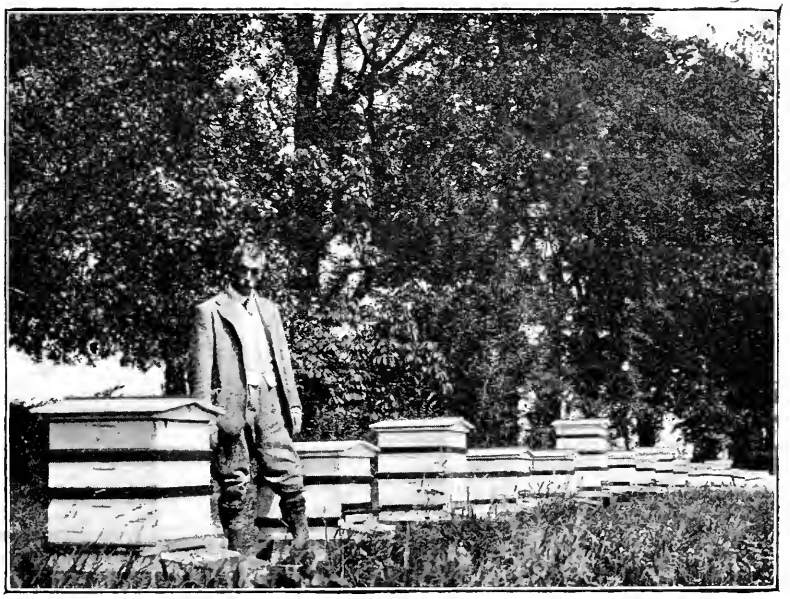
Some day, perhaps, we may send our bees by aerial carrier to those distant hills, where the heather, purple bloom, and fragrant nectar are wasted for want of the little gatherers.—J. M. Ellis, Ussie Valley.

AN IRISH BEE-KEEPER'S INTERESTING EXPERIENCES.

[8536] I am but a beginner at bee-keeping, this being my second year. I started late last summer with a wild swarm, and ended the season the proud possessor of seven hives, duly painted white with green bands round them in honour of the "Ould counthry." Unfortunately, four of these lots "died on me," as they say over here, notwithstanding they had plenty of stores, and, in addition, I supplied them with 5lb. of candy each. In April this year I "spread the brood"; this was on the 10th, and again on the 28th of that month I renewed the process. In the end of May I had all three hives packed with bees, and supered them each with a rack of sections early in June.

At present I have twenty-seven hives, twenty of which are full and doing exceedingly well, but the weather has been so abominable during the last two months that my bees have been sorely handicapped. I also have an observation-hive outside my bedroom window. I put a small stock of bees into this that I obtained out of a hollow tree. They did fairly well for six weeks, then I was suddenly called to London, and the day after I left most of the bees, with the exception of the queen and a handful of workers, were found dead. Now, I am not presumptuous enough to suggest that they died of grief because I had left the neighbourhood temporarily, but it is curious that the mishap should have occurred during my absence. On my return I found that the gardener had obtained and put into this observation hive another swarm; this, too, without disinfecting the hive or taking any precautions to prevent a recurrence of the mishap. This was seven weeks ago, and to-day they are doing splendidly, the queen has laid on both sides of one frame, and the bees have been hatching out for some time. There are also two more frames crammed with honey, pollen and a nice lot of brood on both sides. There, was evidently a desire to go up into the sections, but I have stopped this, as I want the bees to fill the three frames on the other portion of the hive, which has full sheets of foundation in readiness for them, but they do not seem very disposed to go on to that side, because I fancy the glass, being warped, is thus too close to the upright post dividing the two compartments. To obviate this, I last week cut three large bee-ways in this upright, so that lack of room cannot now prevent their following out my intentions. Now, I have read every book on bees and bee-keeping that I can get hold of, and thought I knew all there was to be known about them—theoretically—but I find that as I go on I seem to know less, and I am daily being instructed by experience—practical. A farmer who lives near here told me he would, with pleasure, give me two stocks if I cared to have them, as he never bothered about his bees. Of course, I jumped at the offer, and went to see him as soon as might be. To my amazement I found nine old boxes absolutely crammed with bees; they were going in and out from every crack and cranny in the roof and sides and bottom of these receptacles. One was turned over on its side against a wall, probably by a cow or other animal upsetting it; one was on the grass, and the bees had to alight on the wet ground in this case before they could gain admittance to their home. Not one of these hives was water-tight; in fact, I should say that all, except perhaps the one on the grass, leaked like sieves, and I could not help remarking to the farmer that I would give a good deal for the Editors of the "B.B.J." to see this method of bee-keeping. But the result was astounding, and gave me quite a shock, for I was primed with the newest methods, &c., and my bees died in the best of hives, whilst this man's bees had flourished in this condition for years. There are plenty of wild bees in the chimneys of both empty and occupied houses, also in old trees, old walls, &c., about here. I have taken many, more for the fun of the thing than anything else, but I found that I generally lost the queen until I hit upon a plan to catch her, which, in practice, has proved eminently successful. The apparatus in question is but a swarm-box, and is large enough to hold easily six frames, with the tin ends on. The frames are tied on to the top of the box with string, through small holes bored for that purpose. One side of the box slides out, and I nail a small strip at the bottom of this as an alighting-board. To the top of the box I screw on a small handle of leather, then it is complete. To use this contrivance, open

up the combs, but do not smoke the bees more than is absolutely necessary to subdue them. Cut away all honey-combs, and put them in a receptacle under a cloth; then, lastly, cut out the combs containing brood, and tie them into the frames with string. It is odds the queen is on these brood-combs. Then put the box, with the side propped open with a small stone, close by, and finally use the smoker vigorously. In this way I have managed to save some splendid stocks this season. In one case the queen flew and alighted on a bush some yards away, but only for a second or so, for I found that she had entered my box, and in half-an-hour I had the stock mostly in, but left the box until the evening in order to catch the flying bees. Another I put on the top of a rock cliff, at least 80ft. above a river, but hidden in the bushes, whilst the third I put in a cottage garden, in what I considered to be an ideal spot. Now for results: In No. 1 I have a splendid swarm, probably from the neighbouring wild stock; but I must mention that I had a frame of foundation nailed in this box when I put it down, and have put honey and water in twice through a hole in the top which I stopped with a cork. I brought these bees home safely in the evening, and have supplied them with a brand new hive, their own frame of brood and some drawn-out combs; so they ought to do well before winter. No. 2 on the rock had no foundation, nor had any food been supplied, but I found yesterday that a small cast of perhaps 2lb. of bees had taken possession, and they have also a new hive and three frames of foundation, then the dummy pushed up to keep them snug for the present, but I am feeding them with some old honey I have by me, and shall have no difficulty in getting them strong for the winter by uniting them to some driven or condemned bees—plenty of which I can obtain in the neighbourhood for the trouble of taking them!—"APIS," Co. Cork, July 26th.



APIARY OF AN IRISH READER.

This stock, without the box, weighed just under 11lb., and I took nearly 1cwt. of honey and comb. Bees in chimneys I give up as a hopeless job. You may suffocate them before they will leave, and although I have tried seven times I have failed to get the swarm entire in every case, only getting a pound or so of bees for my trouble, which I have had to unite to some other stock in my apiary. I have already trespassed too far on the Editor's space, but I think a small dodge I tried this year may interest my brother and sister bee-keepers: I put down this spring three old empty brandy-boxes, with a bee-way and small porch over, and alighting-board to each. One was in a tree about 20ft. up and within 50yds. of a strong stock of wild bees in a tree.

"ISLE OF WIGHT" DISEASE.

[8537] In replying to Mr. Woodley's note on the above (p. 304), I wish to say that the disease is being sent out by some dealers, and "it is a dastardly trade," but it can

hardly be "nipped in the bud" for it is now in full bloom. The case referred to by me three weeks ago was first noticed when unpacking. The bees were destroyed, and have been replaced by another swarm from the same apiary. They will want watching, but who is to do it? In reply to my letter, one came from Lincoln, asking the name of the dealer. But since then I have had another case in hand from Derbyshire, only a few miles from here, that of a lady's only stock, which has been destroyed. I asked her where she got the bees, and found that they came from the same dealer as those of my Lincoln friend. I ought to mention that as a result of my Lincoln friend obtaining the swarm from this dealer "Isle of Wight" disease appeared in his apiary, destroying twelve stocks, and now seven other apiaries in the neighbourhood are affected. These dealers advertise for swarms, buy and send them to all parts, and thus spread the disease. Since my former letter [page 276] appeared I have received some very painful ones. One poor working man says he has lost ninety-six stocks, and has only nine left; only three doing any good. So you see he has very nearly gone under. From what I hear I am satisfied there is not any safe cure in the market yet. A bee-keeper thought and wrote that he had found a cure, but since then he has lost all his bees. Will Mr. Scrope-Viner [Bee Journal, July 25, p. 295] watch his bees and report later?—J. Pearman, Expert, Penny Long Lane, Derby.

BEE DISEASES BILL.

[8538] In my opinion the above Bill is too sweeping in giving Local Authorities power to destroy the contents of any hive in the manner provided for under Clause 2. I think that this Clause should be amended so that after the words "and any such order may direct" it should read "that the Local Authority shall serve on the occupiers of any premises on which any bees or bee appliances may be found suffering from any infectious disease a notice in writing ordering him or her to cleanse and free from disease within twenty-one days such bees, and a shorter notice in respect of any appliances: say seven days."

If the Bill was amended in this respect I think that every bee-keeper would have a chance of saving his stocks when examined and found to be suffering from disease.

The letter from J. Anderson (page 333) in your last week's Journal shows that others are dissatisfied with the Bill in its present form, and in view of this, would it not be well for those who disapprove to meet together and discuss the question? As a series of meetings are being held in London, it should be possible for the question to be raised at the meetings so that the purport of the Bill may be brought home to every bee-keeper, and any amendment discussed which may seem desirable.—W. J. Ayles, Broughton.

BEE DISEASES LEGISLATION.

[8539] At a committee meeting of the Cheshire Bee-keepers' Association, held at Chester on August 12 last, the following resolution was passed unanimously: "That all Members of Parliament in the county of Cheshire are earnestly urged to support the Bee Diseases Bill which is now in print, and will shortly be brought before the House of Commons for its second reading. We are convinced that a measure is absolutely necessary to check disease amongst bees, which is at present uncontrolled and spread unnecessarily by careless and negligent bee-keepers."

This resolution is being sent to all Cheshire M.P.'s and to the Board of Agriculture. Will you ask other County Associations to pass similar resolutions, and so prepare members of the House of Commons to support the Bill when it comes up for its second reading.—E. W. Franklin, Hon. Sec., Mouldsworth, Chester.

FIRST YEAR OF BEE-KEEPING.

[8540] A local enthusiast so interested me in bee-keeping that I decided to start it myself last spring. I gathered what literature I could and studied it, so that I might know what to do when the bees arrived. The month of May found me with a hive ready and a beginner's outfit at hand. The swarm arrived on Saturday, May 25, 4lb. in weight, the bees British blacks. It was with much excitement that they were thrown out in front of the hive and the queen looked for; but, alas! she was too quick. The swarm on eight frames, of which two were full of honey from my friend's hive, soon settled in their new home. On June 1st I put the feeder on full of syrup, which the bees cleared over-night. On June 19 I put on the first section rack for the lime-flow, which the bees did not enter till the 30th. On July 12 I was putting in another rack of sections. July 19 saw me take off the first rack, and on the 25th I removed a second rack. So I have had the splendid result of 42 sections for my first season.—S. G. Lewis.

BRIEF REPORTS.

The season in Mid-Kent has been fair, but not so good as last year. May was very favourable, but June a blank, and July for a few days splendid. Clover did not bloom so freely as usual. Those with

large apiaries on the hills suffered through a shortage of sainfoin, as it grew very weakly through dry weather last summer, and the wet winter killed it outright. —J. C. ROBERTS, Hon. Sec. of the Mid-Kent Bee-keepers' Association.

The season here has been disastrous from a honey harvest point of view, and now hives are surrounded by water, with a lot of honey to be removed. Swarms there have been by the score no matter what precautions were taken, Italians being the worst culprits; but I never saw bees stronger in August than this year. There have been several outbreaks of foul brood. The worst cases have been destroyed, and Apicure has cured the rest. Sections are completely "off," but what extracted honey there is is of a lovely colour and good flavour.—L. ANDREWS, Peterborough District.

This is the worst season I have experienced since I have kept bees, not having 1lb. of surplus; and most stocks want feeding. This is the general report round here, although a few claim to have done fairly well.—R. E. B., Hadleigh, Suffolk.

This is the worst honey season I have ever seen in Lewis. But honey was simply rolling into the hives in the Orkney Island when I was there between July 16 and August 2.—JOHN ANDERSON, Stornoway.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Blacks in Australia.—The editor of the "Australian Bee-keeper" gave his readers the following conundrum as the subject of a prize essay for June: "Why are Italian and Cyprian bees better honey-gatherers than blacks?" Evidently he expected the essayists to curse blacks; but, Balaam like, the leading writers *blessed* them. The first prizeman wrote: "I have had blacks that could keep the pace with the best colony of Italians that ever stood in my apiaries. I have several colonies of black bees at the present time brood-rearing and storing supers when my golden Italians have no brood and are gathering no honey. In winter and early spring blacks would take a good deal of beating."—Thos. Armour. The second prizeman says: "Some believe the others are more industrious than the blacks; I don't think so. I have tested Italians and blacks side by side, and find the blacks, as a rule, start out about thirty minutes earlier each morning, giving an advantage of three-and-a-half hours a week. The blacks simply need improvement by careful selection."—W. Reid, senr. Mr. Beuhne, who is not a competitor, writes: "Are they? Taking an equal number of hives of the former and the latter, the yellows are the more profitable, simply because the average number of bees and colonies of the yellow races is greater than that of the blacks. Compare colonies of equal strength, and the difference in results disappears, and I question for some districts whether the black would not be the better bee." All the three quoted are leading Australian apiarists—first rank men.

Bad Wintering.—In *Gleanings* we read: "This year has been very unusual. Last winter was the killingest winter I ever knew. A good many trees and bushes were killed root and branch, nearly all my roses being gone. The loss in some apiaries was 75 per cent.; in others, 100 per cent." And yet Dr. Miller has no heather within reach of his apiary!

Carniolans.—Messrs. Root have one apiary of Carniolans, and this is how they have been behaving this season: "When they get on the swarming rampage they violate all rules—abscond without queens, come out at any time of day, stay in the air for hours, and swarm when queens are caged in the hive. They are excellent bees to train up and for extracted honey, but no good for comb honey."

Extra Floral Glands.—In this country we have a few flowers with this source of honey supply; our field beans being one. *Gleanings* says the cotton plant secretes nectar not only in the flower but at the leaf-bracts. "When atmospheric conditions are just right, such large drops of nectar will collect on these leaf-glands that one may readily test it, and a bee has to visit only a very few to obtain a load. At such times they neglect the blossom entirely, and the honey comes in with a considerable rush. A generation ago Lord Avebury asserted that bees preferred blue to any other colour. Mr. Lovell now holds that 'as a whole, blue flowers appear to be of much less value as sources of nectar than yellow or white ones.'"

South African Bee Journal.—The July journal has been issued in an unmanageable shape. Mr. Oettle has retired from the editorship, which has been assumed by Mr. Northcroft. Apparently S.A. bee-men can sell their produce at a paying price. Here are the prices quoted from the depot list: "First grade, 20s. per dozen; second grade, 18s. per dozen; third grade, 15s. per dozen." Temporarily, they offer 19s. and 16s. for the two lower grades. "The right to introduce any outside bees is reserved exclusively to the Government, and the introduction of honey and second-hand appliances from overseas is absolutely prohibited."

A Model for Us.—"If you write Dr. Phillips in advance, he will send you a

tin box just right to contain a piece of brood-comb, 3in. by 4in. Not only that, but he will send you a frank so that the postage will cost you nothing. And he will make no charge whatever. Could you ask anything better?" Some such official and system are necessary in this country if we are to suppress bee diseases effectually. How important this is can be gathered from the fact that tests have shown that honey-bees are accountable for over 80 per cent. of the help given in the fertilisation of the apple. Fruit-growers have therefore a most direct interest in aiding in any scheme which assists in eliminating disease.

Tit-bits—"Dealers and consumers, as a rule, do not object to pay a fancy price, providing they get the goods that correspond to the price."

"Bees exhibit *colour fidelity*, but this does not become obsessional, since they quickly learn not to discriminate when this is to their advantage."

"Brains and *persistence* are necessary to make bee-keeping a success."

"I never used an excluder, and yet I never knew a queen to lay an egg in a bait section. It is fifty years since I began bee-keeping (Dr. Miller), and I never yet melted a comb because it was old."

Marked bees during a period of plenty were never found more than a mile from the hives. After pasturage became scarce, they were found two-and-a-half miles away. Over a hill, although nearer home, none were seen, even although forage was good.

"A queen may be yellow all over and produce perfectly black bees. Conversely, a queen that is almost black may produce bees that are very yellow. An extra yellow queen mating with a black drone will produce all colours of bees, ranging from black to yellow."

"No grading should be done by artificial light, because neither it nor strong sunshine will enable a person to grade comb-honey properly, owing to its transparency."

Queries and Replies.

[8517] *Unsealed Honey: Queen Returning to Wrong Hive.*—I shall be greatly obliged if you will answer me the following questions in the "B.B.J.":—(1) Is petroleum jelly suitable for smearing quilts, etc., to prevent bees sticking them down? (2) On account of bad season some of my honey was not sealed when extracted. The jars now have a kind of froth on them. Shall I screw them down or leave them open a while? (3) To-day I noticed a young queen trying to get into one of several nuclei which I have used for queen-rearing. The bees would not let her enter. Had she gone to the wrong hive, or had she returned unfertilised? Is it likely she would eventually find the right hive?—SUNDRIES, Grimsby.

REPLY.—(1) No. (2) The honey is fermenting, and if you screw it down it will burst the jars. Warm it by standing in hot water as advised in Mr. Herrod's book. (3) The queen was trying to get into the wrong hive. In all probability she would find her own home.

[8518] *Transferring Bees, and Other Queries.*—(1) I bought a fairly strong stock of bees in May, and one Saturday took off about thirty-two sections, nearly all well filled, leaving about eight or ten unsealed and partly filled. These I have left on for the bees to take down if they like, as the weather is so bad. In about a fortnight I shall be having a New Federated hive, which I shall disinfect with "Isle of Wight" Cure as a preventive, and transfer the bees from the old single-walled hive where they have been for some years into the new hive for the winter. Do you think this wise? How many combs of stores will they require? (2) I purchased a small square observation hive, the combs of which are 10in. by 6in. The bees are on eight frames. The top is flat, with no super or anything, and no room for quilts, etc. I thought of placing the bees in a strong wooden box as they are for the winter, cutting a slot in bottom to admit air, and wrapping up warmly till the spring. I shall also put on a feeder very soon. How many combs, of the above size, ought to be full to carry the bees through the winter? The combs are new, although not standard-size. I thought in the spring of putting an addition on to the hive, standard-size, as I wish to keep the hive as it is. (3) I have also another hive holding fifteen standard frames, new, with a this year's swarm on nine frames. I suppose when I pack the bees up for the winter I can take out the drawn out combs that they are not using and make the nest smaller by means of a dummy? (4) Is it safe to keep three hives of bees in my garden, which is 57ft. long by 14ft. wide? At the top of the garden there is a 6ft. fence, at the sides 5ft. boarded. The hives stand side by side just 5ft. away from and facing the 6ft. fence, with a field on the other side. There are neighbours on each side. Does it affect the bees in returning home loaded to have such limited space? (5) I thought of making a platform about 3ft. up the fence. Do you think it would answer to stand the hives on?—INTERESTED, Hertford.

REPLY.—(1) It will be quite right to transfer into new hive. The bees should have 30lb. of stores, *i.e.*, eight combs well

stored with food. (2) All the combs will have to be full of food for the bees to winter. Do not waste time and money altering the hive as you suggest. Work the bees out into a proper standard-size hive, either observatory or ordinary. (3) Yes. (4) The limited space will not affect the bees, and it is advisable to protect your neighbours from possible annoyance. (5) Keep the hives on separate stands about 9in. above the ground. There is no necessity for the raised platform.

[8519] *Re-queening.*—In re-queening an old stock by uniting a lot of driven bees with a young queen, is it the best method to hive the driven bees first on frames of comb and then unite by alternating the flour-dusted combs? Is it necessary in this case to (1) destroy the old queen twenty-four hours before uniting? (2) To cage the young queen before adding to old stock? (3) In any case I suppose it would be fatal to destroy the old queen, and then after well dusting bees in stock to put in the driven bees also well dusted, at the front of the hive? —F. Wilson, Cardiganshire.

Reply.—(1) Yes. (2) It is just as well to do this, to be on the safe side. (3) It would be very difficult to accomplish this.

Bee Shows to Come.

September 3rd, at Deddington, Oxon. Honey Show in connection with the Annual Flower Show of the Deddington Horticultural Society. Open classes. Apply for schedules to Mr. H. J. Harmsworth, Deddington, Oxon.

September 4th and 5th, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle. Open classes, special prizes. Schedules from G. W. Avery, Holme House, Wetheral, Cumberland.

September 5th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Judge, W. Herrod, F.E.S. Schedules from A. Wakerell, 22, Mansfield-road, Croydon. **Entries close September 4th.**

September 10th, at Woodstock.—Honey Show of the Oxford B.K.A. Open classes for single 1lb. jar of honey, and 1lb. section. Exhibits to become the property of the Association. Entry free. 1st prize, 7s. 6d.; 2nd, 5s.; 3rd, 2s. 6d. Schedules from H. Turner, 4, Turl-street, Oxford.

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

September 14th, at Dumfries.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in St. Mary's Hall. Five open classes; Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Schoolhouse, Howwood, Renfrews, N.B. **Entries close September 7th.**

Wednesday, September 25th, at Altrincham.—Eleven classes, four specials. Judges: Rev. T. J. Evans, Rock Ferry, and Mr. T. Johnson, Taunton. Prize list now ready. Prizes, £2, £1, 15s., 10s., and 5s. J. Herbert Hall, 1, Market-street, Altrincham, secretary. **Entries close September 9th.**

CROYDON B.K.A.

The Show at Horniman Hall announced to take place on Aug. 28 has been postponed to Sept. 5. A. G. Wakerell, Hon. Sec.

Notices to Correspondents.

M. R. (Kent).—*Fermented Honey.*—If not badly fermented it might be used, after being boiled for about ten minutes. Care must be taken not to burn it.

C. A. J. (Hereford).—*Honey from Suspected Stocks. Driving Bees.*—(1) If there is any doubt about it you should not use such honey. Boil for about ten minutes. (2) Tap at the ends of frames when driving. If you tap at the sides there is danger of the combs breaking down from the movement to and fro.

X. Y. Z. (Kent).—*Tartaric Acid in Syrup.* —Tartaric acid is used in candy only, in order to ensure a fine smooth grain. Use vinegar in the syrup.

Novice (Glascoed).—*Stimulative Feeding.* —(1) This is carried out when there is an absence of stores in the hive, and also if breeding ceases very early on account of bad weather. (2) Start at once if necessary. The honey flow ceases about the end of July, as a rule, but you ought to be the best judge of your own district.

G. E. M. (Leicestershire).—*Using Apieure.* —You must persevere with the remedy until only healthy brood is found in the hive. It may take three months to cure if a bad case. The bees will clean out the affected cells.

F. H. J. (Wellingborough).—*Receipes in which Honey and Wax are Used.*—(1) There is no advantage over the wooden entrance in the Swiss metal entrance, in our opinion. (2) These recipes will be found in Mr. Herrod's new book. (3) Your sample of honey is of good quality, mainly from limes. It is worth about 9d. per lb. (4) A recipe for black boot polish, given in "Wax-craft" by T. W. Cowan, is as follows: "Melt together 1lb. of white wax, 1lb. of crown soap, 5oz. of ivory black, 1oz. of indigo, and ½ pint of nut-oil. Dissolve over a slow fire, stir till cool, and turn into small moulds."

Honey Samples.

Mayhew (Sussex).—There is nothing peculiar about the honey. It is mainly from white clover, but is granulating in a flaky manner.

J. A. S. (Wooley).—By some means the tube has been broken in the case. The honey had all run out, so there was nothing for us to examine.

L. C. F. (Eastleigh).—In flavour, density, and aroma, your sample is poor. Colour dark. It is worth about 6d. per lb.

G. C. (Stockport).—The honey is a light-coloured sample of good flavour and aroma, but it is only fair in density.

G. E. H. (Sherwood).—The section was smashed to pulp through insufficient packing. So far as we can tell from the remains, the honey is from the limes.

E. A. S. (Bearwood).—The honey is good in all points except aroma, which is rather strong.

Suspected Disease.

P. T. (Parkeston).—The bees were drowned in honey, and we could do nothing with them. Comb contains pollen and honey only.

C. G. (Essex) and G. H. (Chesterfield).—Bees are affected with "Isle of Wight" disease.

Miss G. L. (Wiveliscombe).—Continue using Apicure. It will cure the bees, but you have not tried it long enough.

A. M. K. (Kingussie).—We cannot see anything wrong with the bee sent. It is an English black. The stock might be benefited by requeening with an English queen. Full instructions for the introduction of queens were given in "Helpful Hints to Novices," pages 312 and 332 of BEE JOURNAL for August 8 and 22.

W. R. (Oxford).—We regret to say the bees show outward signs of "Isle of Wight" disease. The honey is all right for human consumption, but it must be dealt with very carefully, or other bees may gain access to it and so carry the infection to their respective hives.

NOTICE

The **Experimental Apiary** of the British Bee-keepers' Association is now established in the Zoological Gardens, Regent's Park, London, N.W.

FREE

Courses of Instruction in bee-keeping, with Practical Demonstrations, will be given throughout the year at the Apiary by the Association's expert, W. Herrod, F.E.S.

Particulars and dates can be obtained from W. HERROD, Secretary, B.B.K.A., 23, Bedford Street, Strand, W.C.

Special Prepaid Advertisements.

3 W.B.C. HIVES for sale, 15s.; must be cleared, going away.—J. HUNT, 28 Glenforth-street, Greenwich. v 89

FOR SALE, 5 stocks bees and all necessary appliances, new condition, 2 new hives, empty.—HODGES, Bradpole, Bridport. v 61

FOR SALE, 10 strong, healthy stocks bees, good modern hives, all necessary apparatus; owner removing.—POPE, Bridgerule, Devon. v 63

FOR SALE, Bee house, 12ft. by 8ft, carpenter's bench, extractor, ripener, 13 hives, 3 stocks bees, all appliances, good condition, £32, cash.—FRANCIS ASHWORTH, Boreham-road, Warminster. v 64

HONEY, extracted, light colour, 62s. cwt., empties returnable, sample 3d; also 3 stocks of bees, and 2 new hives.—HASTINGS, Wellcombe, Stratford-on-Avon. v 65

SURPLUS 1912 QUEENS, Sladen Carniolan Hybrids, 5s.; Italian, 4s.; English, 3s. 6d.,—WHEATLEY, Spa Apiary, Hinckley. v 66

HEALTHY BEES, on 6 Standard frames, with young queen, well full with stores; offers or exchange.—H. C. TURK, 101 Rivers Corner, Sturminster Newton. v 75

PURE ENGLISH HONEY, sample free.—ERNEST E. HARDY, Oak House, Great Yeldham, Castle Hedingham, Essex.

HONEY, Pure English, 2½ cwt. in 14lb. and 28lb. tins.—CARRETTE, The Laurels, Wisbech. v77

GOOD STOCK in new hive, healthy, and appliances for beginner, 25s., bargain.—STAPLEY, 9, Junction-road, Croydon. v 71

WANTED, few pounds Dadant brood foundation; full particulars.—J. YOUNGER, 21, Mackenzie-road, Cambridge. v 79

STRONG 10 frame stocks, healthy, good queens.—R. WALTON, Percy-road, Whitley Bay. v 69

1½ CWT. of finest extracted honey, in 28lb. tins, free on rail, 58s. per cwt., tins returnable.—R. WILLIAMS, Hatherop, Fairford, Glos. v30

SUPERIOR light North Wold Clover Honey, 56lb. 40s.—SMITH, Decorator, Caistor. v 83

FOR SALE, Apiary of 30 colonies on frames, with quantities of combs, &c., inspection invited; what offers?—SMITH, Decorator, Caistor. v83

WANTED, 28lb. tin light extracted honey exchange for 1 white Wyandotte cockerel, 6 young hens (various), 5 April cockerels.—MULLEY, Upton-on-Severn. v 73

PURE LIGHT CAMBRIDGESHIRE HONEY, sections, 8s. 6d. dozen; screw top jars, 8s. 6d. dozen; 28lb. tins, 63s. cwt.; sample, 3d.—C. P. HAWKES, The Cambridgeshire Apiary, Swaffham Prior, Cambs. v 54

WANTED, Extractor, geared, good condition, must be cheap for cash.—HAILES, 28, Highfield-lane, Southampton. v 58

EXTRACTED HONEY, finest quality, about 1cwt., in 28lb. tins, 60s. per cwt.; tins and crates to be returned. — LYALL, Tangley, Andover. v 29

WANTED, Pure English Honey, 2cwt. lots, for wholesale trade.—Samples and lowest price to BRETT, 5, Brunel-street, Cardiff. v 27

1912 QUEENS.—A few excellent Fertiles, 3s. 6d. each.—SNELGROVE, Albert Quadrant, Weston-super-Mare. v 14

OVERSTOCKED; boxes of eight clean drawn out shallow Combs, 4s. 6d.; five boxes for 20s.; six clean Travelling Section Crates, hold two dozen each, good condition, 11s. lot; surplus young fertile Queens, 2s. 6d. each.—KITSON, Stanstead, Essex. v 358

Editorial, Notices, &c.

SOMERSET B.K.A.

ANNUAL SHOW.

The Somerset Bee-Keepers' Association held its annual honey show, in connection with the Taunton Deane Flower Show, on August 1. Owing to the adverse season, the number of exhibits was fewer than usual, but the quality of the honey was excellent throughout. The day was fine, and a large number of members were present. These, together with numerous visitors, formed an interested audience when during the afternoon Mr. L. E. Snelgrove gave practical demonstrations in the bee tent. The judges (Messrs. T. W. Cowan and S. Jordan) made the following awards:

Collection of Honey and Beeswax.—1st, John Spiller, Taunton; 2nd, H. J. Moore, Radstock; 3rd, John Pope, North Newton.

Twelve 1-*lb. Jars of Extracted Honey.*—1st, A. T. Church, Cardiff; 2nd, G. W. Kirby, Bristol; 3rd, John G. Hold, Welling; 4th, H. J. Moore; v.h.c., C. R. Lowe, Tiverton; h.c., J. Pope.

Twelve 1-*lb. Sections.*—1st, H. J. Moore; 2nd, G. W. Kirby; 3rd, J. G. Hold.

Single 1-*lb. Jar of Honey.*—1st, J. Prior, Stockbridge, Hants; 2nd, J. Salt, Saltash; 3rd, A. J. Church; 4th, C. R. Lowe; h.c., H. J. Moore; c., G. W. Kirby.

Single 1-*lb. Section.*—1st, J. Salt; 2nd, H. J. Moore; 3rd, J. Spiller.

Collection of Beehives and Appliances.—1st, Edward J. Burtt, Gloucester; 2nd, S. A. Bradbury, Taunton.

Scientific Exhibit. — 1st, John W. Brewer, Bath.

Six 1-*lb. Sections.*—1st, J. G. Hold; 2nd, H. J. Moore.

Six 1-*lb. Jars of Extracted Honey.*—1st, H. J. Moore; 2nd, J. G. Hold; 3rd, Walter Gage, Dulverton; h.c., J. Pope; c., George Durman, Chard.

Beeswax.—1st J. G. Hold; 2nd, J. Pope.

MEMBERS' CLASSES.

Beeswax.—1st, G. W. Kirby; 2nd, J. Spiller; 3rd, Miss Exon, Bristol; c. W. Dymond, Taunton.

Observatory Hive with Bees. — 1st, G. W. Kirby.

Three Shallow Frames of Comb Honey.—1st, G. Durman; 2nd, J. Pope; 3rd, G. W. Kirby; c., Miss Exon.

Honey Products.—1st, H. J. Moore.

Three 1-*lb. Jars of Granulated Honey.*—1st, G. W. Kirby; 2nd, Miss Exon; 3rd, G. Durman.

Six 1-*lb. Sections.*—1st, G. W. Kirby; 2nd, Miss Exon; 3rd, H. J. Moore; h.c., J. Spiller.

Six 1-*lb. Jars of Extracted Honey.*—1st, G. W. Kirby; 2nd, G. Durman; 3rd, H. J. Moore; h.c., Miss Exon; c., J. Pope.

Six 1-*lb. Jars of Dark Honey.*—1st, H. J. Moore; 2nd, J. Pope; 3rd, G. Durman; h.c., J. Spiller; c., W. H. Jarvis, Cheddon Fitzpaine.

Collection of Six Sections and Six Jars of Honey.—1st, G. W. Kirby; 2nd, Miss Exon; 3rd, H. J. Moore; c., J. Pope.

NOVICE CLASSES.

Three 1-*lb. Sections.*—1st, Abraham Gibbs, Taunton; 2nd, George Durman.

Three 1-*lb. Jars of Extracted Honey.*—1st, A. Gibbs; 2nd, G. Durman; 3rd, J. Pope.

Much credit is due to the show secretary, Mr. R. A. Goodman, who so ably carried out all the arrangements.—L. BIGG-WITHER, Hon. Sec.

BARNET AND DISTRICT B.K.A.

The monthly meeting of the Barnet and District Bee-keepers' Association was held on August 20th at the Society's room, 35, Wood Street, Barnet. In spite of the very wet evening a fair number of members were present, and a very profitable evening was spent.

Mr. E. Watson, hon. sec. St. Albans B.K.A., gave an interesting lecture on "Preparation of bees for winter," and although admitting he was not altogether in agreement with accepted theories, on the whole every bee-keeper present learned several valuable tips. the lecturer's great point being that bee-keepers should use their common sense. Mr. Watson in the course of his remarks said for the successful wintering of a stock of bees the following essentials were required: First, ample stores; second, a strong stock of bees; third, a young prolific queen; fourth, ventilation without draught; fifth, plenty of porous-quilts; but above all he asked his audience to remember that the best of all quilts for bees are bees. The lecturer said he did not approve of hives in which the frames ran at right angles to the entrance, as he thought the frames in this position could offer no opposition to cold winds. After passing the usual votes of thanks the meeting closed.—G. JAMES FLASHMAN.

COMING HONEY SHOWS.

In view of the adverse honey season in many parts of the country, bee-keepers having good honey will be well advised to save some of their best produce for the important honey shows held during this month. The "Grocers'" Exhibition, with its big prize-list and small entry fee, opens at the Agricultural Hall on September 21st, and intending exhibitors should lose no time in making their entries, as the date for closing these is drawing very near. The "Dairy" Show also should not be forgotten; the date for closing entries is September 6th, and the show is held on October 8th to 11th.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

QUEEN INTRODUCTION.

(*Continued from page* 333.)

In a case of emergency a queen cage on the lines of the pipe cover can be made by taking a piece of perforated

FIG. 6. EMERGENCY QUEEN CAGE MADE OF PERFORATED ZINC.

zinc or wire cloth and folding it into a square receptacle which can be forced into the comb, as illustrated at Fig. 6, where the zinc is shown at top cut for folding and fixed on the comb.

Another method I have adopted many times without a single failure is the use of a piece of perforated zinc and a glass tumbler. The queen, with a few workers, is placed in a tumbler which is stood upon a square of perforated zinc large enough to cover the feed hole in the quilt. The flap is then turned back, and the tumbler and zinc placed in position, as shown at Fig. 7. For food a lump of sugar moistened with water is put under the tumbler, which should be well

FIG. 7. QUEEN INTRODUCED BY MEANS OF A TUMBLER AND PERFORATED ZINC.

wrapped up with the quilts to keep the queen warm. At the end of the time necessary for safe introduction the zinc is slipped from underneath, and the queen allowed to descend. This method can be still further simplified by the use of the inside portion of a matchbox in place of the tumbler.

There are a number of cages of different patterns on the market, some simple in construction and working, others complicated and unsatisfactory. The "Abbott" cage, which slips down between the combs, and from which the queen is liberated by the withdrawal of a wire, is a very simple one.

A very good cage, and the one I prefer for my own use, is the travelling introduction cage shown at Fig. 8. In this case, if a queen is purchased there is no need for the novice to handle her at all. The cage is made from a piece of wood about 5in. long, 1in. wide, and $\frac{1}{2}$in. thick. Two large holes and one small one are bored in it. A connecting passage between all three is cut, as shown at No. 1. To give ventilation a groove, which just penetrates the two large holes, is cut at each side, as shown at No. 2. A thin bottom is then nailed on. The small hole is filled with candy, made by mixing granulated honey, castor sugar, and a little wheaten flour to a stiff paste that can be kneaded in the hands. A piece of perforated zinc is cut to fit about $\frac{1}{2}$in. down each side and at one end, with a hole to come in alignment with the feed hole, as shown at 3. For travelling, this is covered with a piece of paper, as shown at No. 4. A loose lid, No. 5, completes the cage, which is wrapped in paper left open at the ends so that air can pass down the grooves. An address label, No. 6, for post, completes the cage. For introduction, the paper covering and loose lid are removed, and the zinc pushed forward, so that all three holes are covered, as shown at No. 7. It is then placed over the frames at the feed hole in the quilt, in the position shown at No. 8, which is viewed from the inside of the hive. It will be seen that the holes in the cage come between the top bars, thus allowing the scent from the bees to penetrate, and enabling the queen to walk out at the right time. The zinc is allowed to remain as at No. 7 for twelve hours, when the cage is pushed forward as at No. 8, so that the food is exposed to the bees in the hive. This is eaten by them, and the queen is liberated automatically. The advantage of this cage can be readily seen, as no handling of the queen is necessary, and after the cage is pushed forward there is no need to touch it for days, therefore it is an ideal one for the busy man or for out-apiaries. In placing bees and queen in this cage it is advisable to use a slip of glass, and not the perforated zinc, as a cover, or they may be injured. The workers can easily be imprisoned, as shown at Fig. 9. The cage is held below the cluster of bees, and the workers scraped down with the glass slip. The holes will be filled, but it is an easy matter to liberate the workers until just sufficient

are left as attendants to the queen, she being placed in the cage last, and the zinc then slid into position from one end as the glass slip is withdrawn. In a

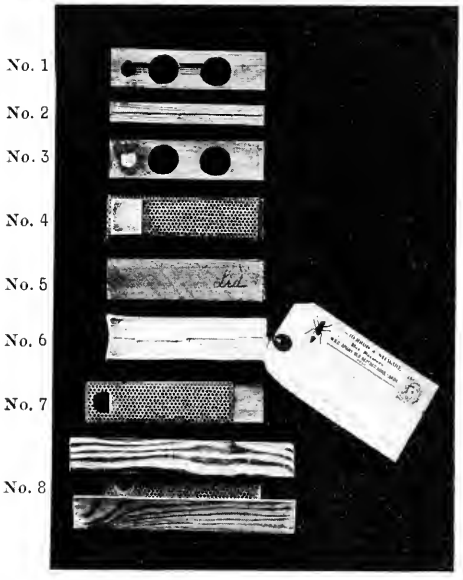


FIG. 8. TRAVELLING INTRODUCTION CAGE.

travelling cage about six to eight bees will be sufficient in very warm weather, and about a dozen in cool. The chief points to remember in introducing queens are:—(1) Be sure the colony is queenless. (2) If it has been queenless for a long time cage the queen on a comb of unsealed brood from another hive. (3) Don't

FIG. 9. CAGING WORKERS.

examine for at least four days after the queen has been introduced. (4) Always put workers with the queen, except in the case of balling. (5) Cage the queen on food in the case of cages which are pushed into the comb, and see there is plenty of food in such cages, as shown at Fig. 8. (6) Introduce only queens that have been properly tested.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

AN UNKNOWN SENSE.

[8541] An interesting article by Henri Fabre on "An Unknown Sense in Animals" affords much suggestion for thought to bee-keepers of enquiring turn of mind. M. Fabre is not the only one who has felt convinced that some animals possess a sense, or it may be senses, which we have not, and therefore may imagine to be impossible. Our five senses need not be named, though we know how variously developed they are in the higher animal creation, and how capable they are of increased power by exercise. But we can readily imagine that a blind person from birth cannot understand, though he always hears it, that any sense can reveal colour. We cannot conceive what he thinks colour is like. This is a very different thing from the common statement that cats can see in the dark. They cannot, though they can hear and feel. Their eyes are so formed that they can readily see with a minimum of light, and total darkness is what they never experience when on the prowl, and what they see is through the organ of *sight* to stimulate the brain. Physiologists have claimed that we possess a sixth sense, that of resistance. This is not difficult to follow or to believe, and perhaps it is this sense, highly intensified, that will keep bats in their flight through a perfectly dark chamber from striking against objects in their course. This sense, if it exists, is different from all the other five we have, in that we know no special organ for its exercise, though this want has been supplied by the physiologists considering that the muscles possess that sense, and therefore it is called the muscular sense, so differentiating it from the purely tactile sense, or sense of touch.

Now, the insect which is so much to us, the bee, seems almost made to tell us that what it knows, and how it knows, is beyond our present grasp and to provoke us to find out its secrets of knowledge. All of our senses it possesses, and for sight it not only has multifold eyes, but three ocelli, which have been called simple eyes. We have never seen anything but suggestion of what these are for, viz., seeing in the hive. But the interior of the hive is, perhaps, more often than not,

perfectly dark. How then can the bee see there at all? Have not recent discoveries by physicists been sufficient to put us on the right track? There are ultra violet rays of light that we cannot see. Röntgen rays, and yet others, have been demonstrated to exist, and some of them are quite capable of penetrating and passing through substances which are not opaque to them, but are opaque to all light that our eyes can see with. What can the use of the ocelli be but to discern by means of such rays, which easily get through ordinary hive walls? But this is not a new sense; it is only a wonderful modification of sight. It may even be surmised that another modification of sight may occur in animals without eyes at all. A denizen of the sea, more than a thousand fathoms (over a mile) down, has been brought up and found to possess no vestige of an eye. At that depth no ordinary eye can see in the darkness. And yet this fish has a flattened, upward slanting surface in the head, which is distinctly phosphorescent. What for but to give light and to receive the impression of another's light by super-sensitiveness of this cranial plate? Other fish at that depth, and at greater depths, have phosphorescent markings and eyes.

But the antennal sense (or senses) of bees is probably the most wonderful of all. For outdoor and long distance purposes sight and perhaps smell are almost perfect, but when the bees come into close contact, other senses that we wot not of come into play for intercommunication with each other. The antennal depressions, cones, and other differing organs, called by Mr. Cowan unknown organs, *must* all have their functions, which we, as yet, can only surmise. Again we read, in *The Honey Bee*, that the front and outer brain tubercles nearly come in contact with the cranium between the ocelli and the antennæ. Here the *ants* tap with antennæ for their communications. This corresponds in part with the supersensitive cranium we have suggested for the deep-sea fish mentioned, only the exciting cause is touch, perhaps accompanied with sound vibration, instead of phosphorescent light. Well may M. Fabre remark on the new worlds of wonder to be opened in this marvellous creation if only we had the senses wherewith to descry them.—S. Jordan, Bishopston.

A PRODUCTIVE JULY SWARM.

[8542] Referring to letter in "B.B.J." of August 22 (page 336) on "July Swarms," I should like to give the results from one which I purchased for 9s. in 1911. This record is of exactly twelve and a half months' work, and the surplus would have been greater if the weather had not become so dreadfully wet. In the 1911 season I took 91b. extracted honey, and left a choked brood-chamber. In 1912 an exceedingly large swarm came off on April 20th, which took itself off, after hiving, the following day. A nice cast, which issued ten days later, was sold. The parent stock gave me 101b. extracted honey, fifty-eight first grade sections, and about a dozen inferior ones, which were fed back to the bees. I have also taken from this hive two frames of honey and eight of brood and eggs at various times this season, to strengthen and start other colonies, and when I took off the supers there were so many bees that I felt justified in making an artificial swarm (August 3rd), purchasing a fertile queen. The operation was successful, and the young queen is bidding fair to outdo the other in prolificness. Practically all honey was sold at 10s. dozen, and I am refusing customers already. I was hoping to send you a photograph but the photographer didn't turn up, I suppose owing to the weather, so I must postpone this. I enjoy reading the Record and Journal, I think, even more than I did twenty years ago, when I started to keep bees, and couldn't make out why I used to get stung so, "using no smoker or veil." I should like to mention a useful hint that to my mind saves the life of the extractor, that is, to smear the parts with vaseline when finished with.

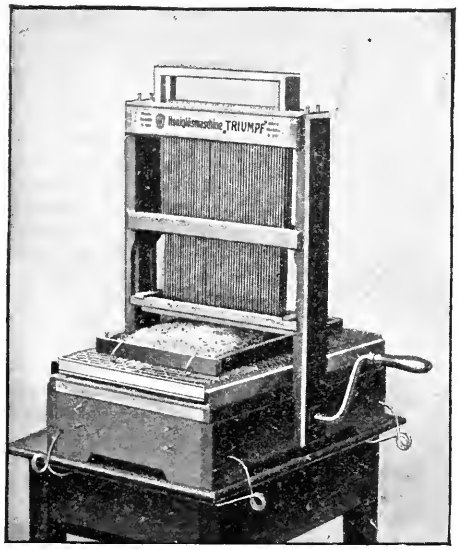
The common sides are becoming green and strong with young clover again here. I do not think the "Isle of Wight" disease is so prevalent in this district as it was; in fact, I have only heard of one slightly affected hive, where formerly there were dozens. Hoping for still improving bee times.—A. H. Hamshaw, Bramley.

BEE NOTES FROM GERMANY.

[8543] I appreciate greatly the "Cappings of Comb" from the pen of your esteemed contributor, L. S. Crawshaw. His buoyant nonsense is often like a heart-refreshing relish when one is sick of all the sweet honey. More than once this year I intended to reply to his kind notes on page 48, vol. xxxix. (1911), but pressure of work, and—to be frank—a certain lazy disposition has prevented me as yet from carrying out many laudable intentions. But now I am able to show Mr. Crawshaw the machine which he expressed a desire to see. The illustration will convey some idea as to the working of the machine, which, however, is not an extractor, as Mr. Crawshaw erroneously calls it, but simply an apparatus with which to render heather honey extractable.

Extracting Heather Honey.—For the

explanation of the principles on which the construction of this machine is based, I must refer your readers to my notes on page 6, vol. xxxix. (1911). The comb to be treated is uncapped and laid on the tablet as shown in the illustration. A turning of the handle results in an elevation of the table on which the tablet rests. While the comb is being elevated, the needles, hanging between the vertical framework, plunge into the contents of the cells beneath them. Any needle meeting a cell-wall or reaching the bottom of a cell will be carried up until the comb has reached its highest point. The weight of every needle is, by means of its length, so balanced that none of the structures of the comb, however delicately built, can be damaged. If the handle is turned on further, the tablet is lowered, and moved on for about 1½in., as soon as the comb is clear of the bunch of needles. This operation is repeated by simply turning the handle until the entire surface of the comb has passed the needles, *i.e.*, until the contents of every cell has at least once been stirred by a needle. Then the comb is turned, and the other side treated in the same way. If, after this simple treatment the comb is put into an extractor, the heather honey that could not be extracted by any other means possible leaves the cells as if by magic, though not in a stream like other honey, but in the shape of lumps.



MACHINE FOR RENDERING HEATHER HONEY EXTRACTABLE.

Illustration kindly lent by Mr. Heinr. Thie, Wolfenbuttel, Germany.

The illustration shows only one of different constructions in which the same principles and ideas are embodied. The machine does work, and it would be interesting if one of your experienced heather men would give it a trial, and report on it. If I am not mistaken, "D. M. M." somewhere stated that he gets 1s. 6d. for his heather honey. This price, and the advantage of having the combs saved, would justify the extra labour. After some practice, fifteen and more standard combs could be passed through the machine in one hour, if previously uncapped, or if the uncapping is done by a second person, who could also carry out the extracting.

The Sugar Question.—On page 48, 1911, Mr. Crawshaw says: "It is not quite clear how the consumer (the English buyer?) pays the export bonus on German sugar"; and Protection, whatever its faults, can hardly, as he implies, assist the Chilian honey by raising its price.

The time of the export bonus on sugar is past. Indeed, since the Brussels Convention it is only Russia that still pays the export bonus. But the export bonus had, of course, to be borne by the inland consumer. So, in order to enable the German sugar industry to supply England, the best European sugar market, with cheap sugar, the German consumer had to pay an exorbitant price. Some time ago, in a traveller's letters from Persia, I discovered a novel way of making a decent living by means of a few sacks of sugar. The ingenious persons who live on the Russian export bonus buy some hundredweights of sugar in Russia, export it over the Persian border, and pocket the bonus. Then, to complete the circuit that works well and affords a regular income, they smuggle this sugar back over the frontier of Turkestan—the weak part of the Russian frontier—and export again and again.

In Germany an indirect tax of about seven shillings is levied on every hundredweight of sugar consumed. This year, for the first time, German bee-keepers could get, for spring feeding, about 11lb. per colony, tax free. But the sugar had to be ground and adulterated with five per cent. of its weight with sand in the presence of Customs officials.

Chilian Honey.—The Chilian honey Mr. Crawshaw mentions in his notes already referred to could hardly find a market in Germany on account of the import duty, amounting to about 20s. per cwt. It is the inferior sorts that are imported into this country, those that would probably nowhere find a market. In a free trade market they would have no chance. That

is what I meant by intimating that Protection lowers the standard of food and breeds adulteration.—R. LINDE, Wendhausen b. Hildesheim.

ROSS-SHIRE NOTES.

[8544] *The Last Stand.*—August departed still weeping, and the present month has come in accompanied by high winds and more rain. Yet our indefatigable bees are desperately trying to reach the moors. Beaten down by the elements, on hands and knees they cross the wind-swept high road *en route* to the luring purple heather. Such perseverance may be rewarded as in 1902, when a replica of the present season to date was followed by an excellent heather-honey flow in September.

Most colonies are still populous enough to crowd a single super, while the weaker ones have been mutually strengthened by uniting. For instance, in the case of three medium colonies standing in line, I removed almost all the brood with adhering bees from one hive, and divided same between the other two hives. This made two strong colonies fit to occupy supers, while the third is being stimulated to build up another brood-nest.

Feeding Back.—Well-finished comb-honey is a rarity this season, and I know of a buyer vainly offering 1s. 6d. each for perfect clover sections. An extensive bee-keeper here has serious thoughts of trying to get his sections completed by feeding back extracted clover honey.

Americans have shown that this scheme can be made a commercial success, but only when carried out over shallow brood-chambers, and with young queens. This bee-keeper's fifty stocks are all on 6½in. brood-frames and should be suitable subjects for an experiment of this kind.

Personally, if trying the plan at all, I should do so in a thorough manner by uniting the entire population of two colonies on the best-filled brood-combs, and so have plenty of bees to crowd the super. Honey diluted with an equal bulk of water is given in a large box-feeder above, and quickly transferred to the sections, which when full are replaced by others.

All this is perfectly feasible and well worth trying, but unfortunately I have not any extracted honey on hand, and in these days of rampant bee disease it is not safe to buy other people's honey for use in the apiary.

Bee-paralysis.—From all accounts, this nightmare is still devastating apiaries on both sides of the Border, while bee-keepers have the option of combating it with drugs or anticipating the disease by self-destruction of their colonies. The evidence in connection with the use of drug remedies is somewhat conflicting. Some bee-keepers have succeeded with all, while others failed with all and were compelled to destroy where they could not cure. My own experience leads me to believe that the disease is simply and solely in the bees alone, their unhatched brood, the combs, and hive being quite free from infection. The cure, then, is to strike at the root of the trouble promptly by destroying the bees of an infected colony and restocking the hive with a healthy natural or artificial swarm, put direct on the naked brood.

I have had several colonies for over a year on combs taken from diseased bees. These combs were not disinfected in any way, yet the present occupants are perfectly healthy.

Again, our premier Scotch bee-men, Messrs. Muir and Sons, of Kirkcowan, after losing all but two or three out of close on a hundred colonies, resuscitated their apiary in a similar manner, and without any drugging or disinfection whatever.

Perhaps Mr. Muir might let us have the further history of his apiary, and particularly that of the composite stocks, *i.e.*, those made by running driven bees on to combs of brood after sulphuring the original diseased inhabitants.—J. M. ELLIS, Ussie Valley.

BEES NEAR TOWN AND IN COUNTRY

[8545] Mr. J. Smallwood, in "Blurts from a Scratchy Pen," (page 274 "B.B.J.") gives a very interesting account of his experience with the bees in Middlesex and Oxfordshire, and, if I understand him rightly, advances the theory that the bees near Oxford (the seat of light and learning) are docile and easily handled; whilst further away from the city they become less amiable, necessitating wearing the veil.

"D. M. M.," on page 322, has most ably proved the theory to be entirely wrong, but being an Oxonian I would like to express my opinion, it being to some extent both for and against the theory.

Last week I went to drive some bees (the owner living far from the city) and found the bees robbing, and stinging anyone near. The skeps were standing close together in two tiers, and it seemed an impossibility for the bees to distinguish their own homes. After driving several lots, the owner asked if *he* could fetch one? I consented, and he brought an extra strong stock, omitting to give them any smoke before lifting (the smoker was close at hand), although he had seen a dozen lots taken up and bees driven. However, thanks to being in a secluded spot and a carbolic cloth near at hand, no one but ourselves was stung; the veils were practically useless.

I certainly think that bees are more

docile when located near a dwelling-house, with people passing, than if placed in a retired spot far away from passers-by. Generally speaking, such stocks get better treatment, although owned by the same person. For instance, if a bee-keeper has both home and out apiaries, the weather may change after he starts for an eight or ten miles ride to the out-apiary, and the manipulating has in such cases to be done wet or fine. We well know bees do not quickly forget if they are handled when the weather is not favourable.

In the spring I examined some bees near the city, the owner being a most intelligent person, and the weather and everything apparently just right for manipulation, but the bees were veritable stinging fiends, therefore I will leave it for your readers to decide whether this is a point in favour of the theory or not.—DAVID HANCOX.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A Hive Scale (p. 293).—The beauty of the tripod arrangement is that it requires no adjustment whatever, but stands firmly even upon uneven ground. It would, of course, have to be moved from hive to hive, but that would be a one-handed job if the legs were joined by light battens. This form is such as to take the strain in the best possible way. A camera tripod does not give a fair idea of the working of a substantial affair such as would be required. Mr. Mace appears to have considered it only in a cursory way, but if he will try it, he will, no doubt, remain to bless. The beam should swing from a swivel hook.

Swarming Fever (p. 294).—My last swarm of the season, or perhaps it would be more cautious to style it my most recent swarm, issued on August 6. At first I suspected a hunger swarm, and found a nucleus devoid of bees to care for a large quantity of chilling brood. The queen, however, remained alone upon one of the frames, whilst the swarm possessed its own. The mystery appeared to be solved later, when I discovered queen-cells in a hive destined for the heather, and now short of bees. Possibly it was a case of supersedure swarming, in which the hungered bees joined. But why normal bees should swarm at all in a time of dearth is, I admit, beyond my experience. I can only conclude that they mistook our recent so-called summer for a new kind of winter, and hailed the first fine day as a new kind of spring.

Heather Honey (p. 296).—The point raised by Mr. Rose is enlightening, and it may be that many cases of disaster are traceable to a lack of young bees. For sometimes the brood nest is reduced to small limits at the heather. Is it not possible to settle the point by consensus of opinion? Will moor-going bee-keepers mark the hives which go, and compare results as to wintering with those which remain at home? If, in addition, notes are made as to the age of the queens, much valuable evidence may be obtained. Will our heather brethren kindly take the trouble to do this, and help us to settle a disputed point of evident interest?

Prevention of Swarming (p. 305).—The method I adopt is to "shake" the bees as they show any symptoms of swarming, which may be rather cure than prevention. I have, however, needed preventive methods so little in the past that I fear I have grown over confident, and have at times thought that my regular breeding from non-swarming stocks showing good returns was having an effect upon the strain. Evidently I was mistaken, or at least the tendency was not proof against an exceptional season like the recent one.

Hiving a Swarm (p. 317).—This method works very well. The brood-frame may be hung upon bent nails in a T-shaped cross-bar. But a better method is to fasten the frame vertically to the pole itself, a short distance below the end. The end of the pole may then be rested in the fork of a bough. If the pole be rectangular at the top, two wooden staples may be made to hold the frame lugs by nailing pieces on either side of the pole and bridging them with pieces so as to leave a gap of ½in. between the bridge piece and the pole. If the lower bridge piece be ½in. or so higher than its side pieces, a comb may be easily inserted, in the same way as the baskets are put into a Cowan extractor. The sides of the bridges should be fully 15½in. apart for a 17in. top-bar, when the bridge pieces will be 15in. apart, and the top frame lug will have ½in. of hold. To remove the frame, raise it, and swing the lower lug out of place. The width of the top bridge should be sufficient to allow of this. A jointed pole is best for the purpose, and the joint may be made of pieces of wood, or by wrapping sheet iron (tin) around the end of the lower pole, to form a socket. A light pole should be free from knots, or trouble may follow.

Queries and Replies.

[8520] *Stock refusing to take Syrup.*—Will you kindly give me your opinion regarding a stock of bees (English)? They wintered well, were very strong in early spring, swarmed May 19th, and gave me 22lb. fine clover honey. At the time of swarming the stock had two supers on, and after the swarm left it was packed with

bees, but the weather has been very unfavourable. On July 13th the stock gave off another swarm, a very fine one, which is going on well. I have got 14lb. of nice honey from this swarm, and on August 19th took both swarms to the moors to a ten mile stretch of beautiful heather. Now I am concerned about the parent stock, for since it swarmed the bees have done very little flying. I took supers and excluder off and commenced to feed; but they would not take the syrup, and to-day being fine (although gloomy as usual), I examined them to try to find the queen, but failed to see her, and was surprised to find the floor board covered with dead bees. I at once changed the hive and gave them a tin of autumn syrup, and they are now fanning in entrance. After burying dead bees and covering the ground with lime, and pouring boiling water on floor board, &c., and spreading Izal powder around, I hope all will go well. There are a good number of bees in the stock, and although there is no honey coming in, they are fairly easy to manipulate. (1) Do you think they are queenless? if so, should I introduce a fertile queen? (2) Why would they not take the syrup, as do my other four stocks? (3) Do you think the cause of dead bees was dysentery? (4) Did I follow the right plan in burying the dead bees? (5) I have taken three good swarms to the moors. Can I hope for a good surplus, weather being favourable? Thanking you in anticipation for a reply, —T. R., Sheffield.

Reply.—(1) You can only tell by making an examination of the combs. (2) Weak or queenless stocks sometimes do not take syrup readily. (3) Possibly, or it may be "Isle of Wight" disease. (4) Yes. (5) It depends entirely on the weather and strength of the colony.

[8521] *Beginner's Queries.*—I conclude that it would scarcely be possible to have weather more difficult to keep bees in than that which we have had this season. It has afforded unlimited opportunity for experiences of the worst kind. I have had a sad one through robbing. First, a pane of glass was blown by the wind out of my bee house, when the bees made a raid on all the sweets exposed therein, wet combs, etc. Unable to find their way out, it meant death to some thousands. I hoped I had quelled the fever, but evidently it had been going on previously unnoticed, for, to my sorrow, I found one stock completely robbed out and destroyed. It was my intention to give a young queen to all stocks that needed one, but it has been impossible for a novice to attempt it with the weather we have had, and are having. I am waiting for a favourable opportunity to drive two lots of bees in skeps; both swarmed stocks—"old 'uns," the skeppist called them. He is keeping the "young 'uns" (swarms) for himself. These I shall unite to two stocks which will give to each young queens. (1) Do you think I had better give up the idea of buying queens this year for the other stocks unless the weather settles quite soon? I do not see how it would be possible to open the hive and find the old queen if it was wet. (2) Will you be kind enough to tell me why the method of returning a cast early in the morning, as mentioned in the "Guide Book," page 21, is not more emphasized, and in preference to cutting out all queen-cells? The former proved most successful and very easy and simple; whereas the latter was disastrous, besides being much more trouble. The queen in the cast got lost, and the brood at that time being too old to raise another, the bees were queenless for some little time before I discovered their loss. I started the season with six stocks; two very strong, two medium, and two not so strong. I have had two May swarms—one weighing 9lb., the other 10lb. I have taken about 2cwt. of very fine honey, chiefly white clover. (3) Is this a very poor surplus for this season? Fortunately, I received a good price for all, and have also disposed of the whole quantity.—I. S., Braintree.

Reply.—(1) Yes, as probably the stocks have requeened themselves. Leave the bees alone. (2) Because by cutting out queen-cells and giving a fertile queen much time is saved, for the queen accompanying a cast is not a laying one, and may not have been mated. You evidently did not introduce a queen, hence your disaster. (3) Very fair return for such a season as this has been.

[8522] *Carbolic Acid and Phenyle.*—I should deem it a favour if you could give me any information on the following:—On page 197 of the "British Bee-keepers' Guide Book" (20th ed.), Recipe No. 8, it mentions "Calvert's No. 5 Carbolic Acid." (1) I have a large quantity of pure crystallised phenol (C_6H_5OH) on hand, and I do not see the necessity of buying when I have the pure stuff at home. Could you tell me the strength of Calvert's No. 5 acid and the solvent (if a liquid), or give me an equivalent recipe to use the pure phenol? (2) Could you tell me exactly what the "soluble phenyle" is mentioned in the next recipe? Is it diphenyl (C_6H_5), or is it an artificially-made substance, only procurable from the manufacturers?—E. S., Salop.

Reply.—(1) About 10 per cent. of phenol and 90 per cent. of cresols, which consist of ortho-, meta-, and para-cresols. Write to Messrs. J. C. Calvert and Co., Manchester, who would no doubt give you a formula for utilising your phenol. (2) It is a coal tar deriva-

tive, somewhat similar to creolin, procurable either from the manufacturers or of chemists.

[8523] *Using Super-clearer.*—I have just had my first experience in the use of a super-clearer. I have a hive with two supers on, and wishing to clear the top one, I put the Porter bee-escape under it in the evening, as recommended in the "Guide Book." At the same time I noticed that the lower foundation had not been drawn out in the slightest. The following day the bees seemed very excited, flew the whole day, and many crowded round the entrance to the hive. Twenty-four hours after fixing the clearer I examined the hive, but the super still contained some bees, and I decided to remove the clearer and leave the hive in its original condition until I consulted you. I found on the second opening of the hive that a great many bees were on the centre frames of the lower super. (1) Do you think that, finding their access to the upper super barred, they had decided to draw out the lower foundation? (2) Can you account for the bees not having left the upper super after a period of twenty-four hours? (3) Ought the clearer to remain until every bee has left? My clearer exactly covers the frames, *i.e.*, it would just fall within the chamber, being exactly the same measurement as the *internal* measurement of the super. (4) Do you advise me to enlarge it equal to the *external* measurement of the super in order that it may rest entirely on it rather than within it, and on the frames merely? —LEARNER, Worsley.

REPLY.—(1) As the bees could not get access to the upper super there was no where else for them to cluster. (2) It may be for the following reasons: (a) The escape being placed the wrong way up, (b) or it may be obstructed, (c) the presence of a queen in the super; a young one may have got through the excluder, (d) or the colony is weak. In cold weather bees are more reluctant to leave the cluster. (3) Sometimes one or two bees may remain, but usually, if conditions are right when the clearer is put on in the evening, the super is clear of bees by the next morning. (4) Your clearer is evidently faulty, as it should be large enough for the super to rest on it so that there is a space between frames and escape both on top and bottom.

[8524] *A Prolific Queen.*—I should like your advice regarding a queen I have in one of my stocks. She was hatched in May last year, as a result of queen deposing. One queen came out with 1½lb. bees, leaving this one unhatched in the hive. She headed a very strong stock in autumn which came through the winter well. In June this stock was supered, but the hot weather in July brought out a big 7lb. or 8lb. swarm. July 6th it swarmed, and on the 12th a big cast came off; I estimated it at 5lb., but unfortunately it flew off. The swarm was hived, and in less than a week the bees drew out seven sheets of foundation, and the queen was laying in eight combs. What I would like to know is, should I requeen or not, seeing that she will be in her third season next year? My idea, in view of her prolificness, is to keep her another season as I fancy I have got hold of a good strain.—X. L., Altrincham.

REPLY.—The queen seems to be a very prolific one, and could be kept another year, and utilised for queen rearing.

Bee Shows to Come.

September 4th and 5th, at Carlisle.—Grand Annual Exhibition of the Cumberland and Westmorland B.K.A., in conjunction with the Carlisle and Cumberland Horticultural Society, to be held in the Covered Market, Carlisle.

September 5th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Judge, W. Herrod, F.E.S.

September 10th, at Woodstock.—Honey Show of the Oxford B.K.A. Open classes for single 1lb. jar of honey, and 1lb. section. Exhibits to become the property of the Association. Entry free. 1st prize, 7s. 6d.; 2nd, 5s.; 3rd, 2s. 6d. Schedules from H. Turner, 4, Turl-street, Oxford.

September 12th, at Cambridge.—Honey Show in connection with the Cambridge and District Red Cross Horticultural Society. Four classes open to the United Kingdom. To be held in the Corn Exchange, Cambridge. Schedules and particulars of Hon. Sec., E. F. Dant, Member of B.B.K.A., 52, Bridge Street, Cambridge. **Entries close Saturday, September 7th.**

September 21 to 28, at the Agricultural Hall, London.—Great Show of Honey and Bee Products at the "Grocers' and Allied Trades" 20th annual Exhibition. £50 offered in cash prizes. Open to all. Entry fee 1s. Particulars from H. S. Rogers, Palmerston House, Old Broad Street London, E.C.

September 14th, at Dumfries.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in St. Mary's Hall. Five open classes; Three 1-lb. jars extracted, 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1-lb. jar, also one section, 5s., 3s., and 2s. (Entry free, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s., 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from Q. Aird, Schoolhouse, Howwood, Renfrews, N.B. **Entries close September 7th.**

Wednesday, September 25th, at Altrincham.—Eleven classes, four specials. Judges: Rev. T. J. Evans, Rock Ferry, and Mr. T. Johnson, Taunton. Prize list now ready. Prizes, £2, £1, 15s., 10s., and 5s. J. Herbert Hall, 1, Market-street, Altrincham, secretary. **Entries close September 9th.**

October 8 to 11, at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c. Particulars from F. E. Hardcastle, Secretary, 12, Hanover Square, London, W. **Entries close** September 6th.

Notices to Correspondents.

E. H. (New Barnet).—*Unfinished Sections.*—The unfinished sections should be put back again on the hive for the bees to clear out. They will remove the honey to the brood-chamber.

A. E. W. (Bucks).—*Disqualified Exhibitor.*—The Secretary should not have accepted your entry, and you are certainly entitled to the return of your fees.

Jock (Mildenhall). — *Badly - capped Sections.*—The cappings have been made extra thick by the bees, and a little propolis added, thus causing the dirty brown colour. This occurs sometimes in bad weather.

T. F. N. (Bexley Heath).—*Bees Superseding Queen.*—Probably. We should say the bee you saw was a young queen.

Honey Samples.

R. D. (Staffs).—A very good honey in flavour, colour, and density. It certainly contains clover honey, so there must be some about your district.

J. J. A. (Newbold).—A nice light honey, of good flavour and colour. Its worst point is density; it is rather thin, and would be improved by carefully warming. This would also improve its appearance by making it clearer and brighter. It is worth exhibiting at a local show.

H. H. (Norfolk).—The three samples are of good colour and fairly good flavour. All are rather poor in density. We should say 6½d. per lb. in bulk, or 10d. per lb. jar retail, would be a fair price for any of the samples.

T. A. J. (Flint).—The honey is not of very good flavour, and the aroma is not pleasant; it is spoilt by having an admixture from ragwort in it. If shown, it should be entered in the medium class, and its chance of success depends upon what is staged in competition with it.

L. T. (Birmingham).—Honey is medium in colour, good in density; aroma and flavour are only fair.

H. F. (Coventry).—Your sample is a medium one, and is worth a trial on the show-bench.

A. M. (Cambs).—A light honey, mainly from clover. It is not good enough for exhibition purposes.

T. A. S. (Woodley).—Your sample is a nice flavoured, light-coloured honey from clover, and is quite good enough to show.

Suspected Disease.

Beeswing (Rock Ferry) and E. G. (Slough).—It is evidently "Isle of Wight" disease, and you had better destroy the stock.

J. B. (Ilkeston).—The bees have died from "Isle of Wight" disease.

W. E. G. (Dulwich).—Both lots of bees sent have "Isle of Wight" disease.

T. M. (Woodhurst).—The bees were too decomposed for examination.

W. B. (Thornton).—The bees show signs of "Isle of Wight" disease.

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PRIVATE ADVERTISEMENTS.

EXCHANGE Pure-bred Poultry for Honey Extractor; send particulars.—LEWIS, Efailwen, Clynderwen. v 87

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 344

HEALTHY DRIVEN BEES, with Queen, 3s. 6d. per lot, cash with order; orders in rotation, boxes to be returned.—T. PULLEN, Ramsbury, Hungerford. v 355

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WALLFLOWERS, good strong plants, just ready for planting, and one of the best forage plants for bees in early spring: Faerie Queen (lemon), Vulcan (red), Cloth of Gold (rich yellow), Eastern Queen (rosy pink), 8d. per 100, 6s. per 1000; carriage paid.—C. MITCHELL, St. Ives, Kingston, Lewes. v 15

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NEWMARKET HONEY, 60s. cwt., in returnable tins; sample, 2d.—St. Anbins, Newmarket. v 95

FEW Stocks of Bees for Sale.—GIFFORD, 47, Boston-road, Brentford. v 97

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FOR Spring blooming, Limnanthes Douglasii, 50 1s., free.—Millbrook, Clarbeston-road, Pembrokeshire. v 88

EXCELLENT EXTRACTED HONEY, light colour and nice flavour; cash or deposit; sample 3d.—DAVID HANCOX, Deddington, Oxon. v 47

HALF-PLATE STAND CAMERA, cost £4 10s.; what offers in honey or cash? — W. GRIFFITHS, Walton-on-the-Hill, Stafford. v 10

2 HEALTHY STOCKS BEES, with 1912 Queens, large skep, 12s. 6d.; pail, 8s. 6d.; securely packed.—ALUN JONES, Halkyn, Flints. v 13

Editorial, Notices, &c.

CHESHIRE B.K.A.

ANNUAL SHOW.

The annual show of the Cheshire B.K.A. was held at Chester on August 28th, in connection with the Chester Agricultural Show. The entries numbered only ten less than last year's record, and the quality of the exhibits was excellent. The judges stated that they had never seen such a splendid show of beeswax anywhere. The Rev. T. J. Evans, M.A., and Mr. E. P. Hinde acted as judges. The former gave a lecture and demonstration with bees during the afternoon. The following are the awards:—

Complete Frame-hive for General Use.—1st and 2nd, Geo. Rose, Liverpool.

Twelve 1-lb. Sections.—1st, Wm. Reece, Tarporley; 2nd, J. G. Nicholson, Langwathby; 3rd, Jas. Pearman, Derby; r., A. S. Dell, Leigh; v.h.c., C. W. Dyer, Compton; h.c., A. Hulse, Knutsford.

Twelve 1-lb. Jars Extracted Honey.—1st, Jas. Pearman; 2nd, R. Morgan, Cowbridge; 3rd, E. F. Dant, Cambridge; r., E. Church, Cardiff; v.h.c., A. S. Dell and J. Berry, Llanrwst; h.c., F. Newport, Tattenhall; W. Barlow, Knutsford; and A. Hulse.

Observatory Hive.—1st, F. C. Kelly, Hawarden; 2nd, P. Hutchinson, Birkenhead.

Display of Honey, &c.—1st, H. Stubbs, Crewe; 2nd, F. Newport.

Six 1-lb. Sections.—1st, W. Reece; 2nd, H. Johnson, Hawarden; 3rd, A. Hulse; r., P. Hutchinson; v.h.c., L. S. Taylor, Willaston; W. Davies, Northop.

Twelve 1-lb. Jars of Extracted Honey (light) (members only).—1st, F. Newport; 2nd, Job Astbury, Kelsall; 3rd, A. R. Coppack, Shotton; r., A. Hulse; v.h.c., H. Stubbs and W. Barlow; h.c., A. E. Wright, Sandbach.

Twelve 1-lb. Jars of Extracted Honey (medium).—1st, W. Barlow; 2nd, W. Vickers, Malpas; 3rd, W. Davies; r., J. Boden, Northwich.

Two Shallow-frames.—1st, D. H. Burgess, Sandbach; 2nd, F. C. Kelly; 3rd, Mrs. A. B. Collett, Hale; r., E. Atkinson, Knutsford; h.c., J. Carey, Bidston.

Twelve 1-lb. Jars of Extracted Honey.—1st, A. Hulse; 2nd, A. R. Coppack; 3rd, J. Boden; r., J. Elwell, Crewe; v.h.c., Miss F. M. Jones, Hope; h.c., H. Johnson.

Six 1-lb. Jars of Extracted Honey (novices).—1st, Mrs. G. J. Johnston, Chester; 2nd, J. Boden; 3rd, Miss F. M. Jones; r., A. R. Coppack; v.h.c., L. S. Taylor and E. Jones, Horton; h.c., H. Johnson; c., J. Dodd, Chester.

Beeswax.—1st, Job Astbury; 2nd, T. A. Jones, Halkyn; 3rd, H. Stubbs; r., J. Boden; v.h.c., J. M. Moody, Crewe; h.c., D. H. Burgess, A. Hulse, and F Newport; c., A. E. Wright.—E. W. FRANKLIN, Hon. Sec.

NOTTS B.K.A.

ANNUAL SHOW.

The Notts Bee-keepers' Association held their annual show at the Mechanics' Hall, Nottingham, on August 23rd last. A large number of the general public as well as many members of the Association visited the show, which was opened by the Mayoress of Nottingham; the Mayor and Sheriff also being present at the opening ceremony. There were some 190 exhibits staged, the following exhibitors being successful in securing awards:—

Collection of Appliances.—1st, T. W. Harrison and Son, Nottingham; 2nd, A. W. Gamage, Limited, London.

Beginner's Outfit.—1st, A. W. Gamage, Limited; 2nd, R. Mackinder and Son, Newark.

Twelve 1-lb. Sections (open).—1st, W. H. Pearson, Newport; 2nd, J. Pearman, Derby; 3rd, W. H. Corbett, Tarrant.

Twelve 1-lb. Jars Light Extracted Honey (open).—1st, J. Pearman; 2nd, R. Allen, Bicester; 3rd, A. J. Church, Cardiff.

Interesting Exhibit.—1st, G. H. and T. S. Elliott, Southwell.

Honey Trophy.—1st, G. H. and T. S. Elliott; 2nd, D. Marshall, Carrington; 3rd, W. J. Betts, Mansfield Woodhouse.

Twelve 1-lb. Jars Light Extracted Honey.—1st, J. North, Sutton-in-Ashfield; 2nd, W. Doleman, Keyworth; 3rd, J. T. Duckmanton, Langwith; 4th, J. B. Curtis, Carlton-on-Trent.

Twelve 1-lb. Jars Dark Honey.—1st, G. Marshall, Norwell; 2nd, R. H. Mackinder; 3rd, T. Gillett.

Twelve 1-lb. Jars Heather-blend Honey.—1st, G. H. and T. S. Elliott; 2nd, A. G. Pugh, Beeston.

Twelve 1-lb. Sections.—1st, G. E. Puttergill, Beeston; 2nd, G. Marshall; 3rd, F. Gillett.

Twelve 1-lb. Jars Granulated Honey.—1st, J. Woods, Nettleworth; 2nd J. T. Duckmanton; 3rd, G. Marshall.

Pair of Shallow Frames.—1st, J. North; 2nd, G. Marshall; 3rd, G. H. and T. S. Elliott; 4th, J. T. Wilson, Shirebrook.

Amateur.—1st, C. E. Smith.

Observatory Hive.—1st, G. Marshall; 2nd, D. Marshall; 3rd, W. L. Betts; 4th, Mrs. Copping, Beeston.

Honey Cake.—1st, A. G. Pugh; 2nd, G. Smithurst, Watnall.

Mead.—1st, J. Woods.

Honey Vinegar.—1st, W. Doleman.

Beeswax.—1st G. Marshall; 2nd, G. E. Puttergill; 3rd, J. Woods.

MISCELLANEOUS COMPETITIONS.

Wiring and Fitting-up Frame.—1st, H. Mackinder; 2nd, R. Mackinder; 3rd, D. Marshall.

Judging Honey.—1st, W. Darrington; 2nd, H. Mackinder; 3rd, J. Willson.

Folding and Fitting Sections.—1st, H. Mackinder; 2nd, D. Marshall; 3rd, W. Doleman.

A silver challenge vase was offered by W. Herrod, Esq., to the member who obtained the highest number of points in his exhibits, and this was won by Mr. G. Marshall, of Norwell, with 32 points.—*Communicated.*

AMONG THE BEES.

INSPECTORS AND INSPECTING.

By D. M. Macdonald, Banff.

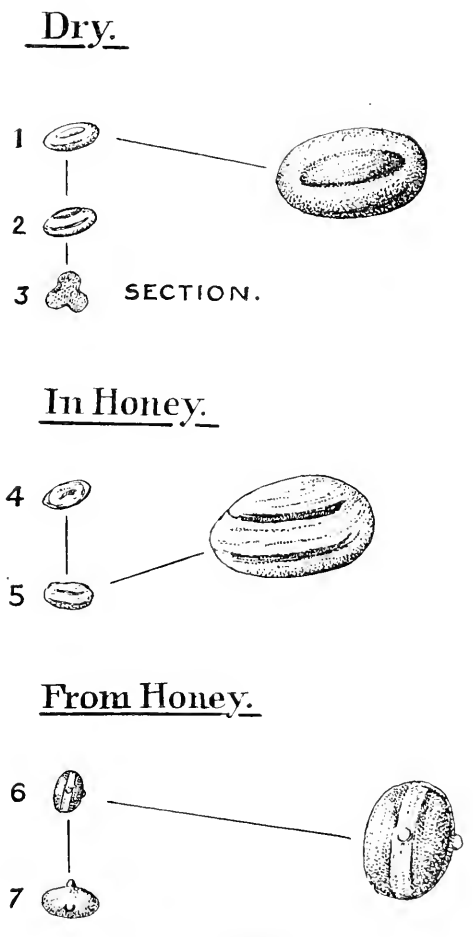
I am led to deal with this subject for the reason that inspection of bees will very soon be a reality, however much some may try to oppose the movement in its favour. Quite recently it has been asserted that inspection would be an evil and not a blessing, and many bee-keepers sincerely believe that experts would, or might, act as disease "carriers." Both contentions I hold are the fruits of prejudice or imperfect knowledge.

The question of disease is fast becoming a desperate one over large areas of our island. Indeed, I may set it down as a postulate that to save disease killing bee-keeping we must kill disease. Therefore, the question of suppression is an urgent one. The sooner an Act, or Order, is passed the better. All other outbreaks of infectious disease are capable of being cabined, cribbed, confined, if not, indeed, ultimately extinguished when taken in hand strenuously. Why then should not foul brood and infectious paralysis be got rid of by legislation, giving plenary powers to our authorities to deal drastically with every isolated outbreak? Think what desolation would have been produced by even a few weeks of an uncurbed spread of foot-and-mouth disease in cattle; and then note how rigid rules, promptly applied, recently checked and suppressed the spread. Apply this to outbreaks of "Isle of Wight" disease. Prompt measures timely taken would extinguish the seeds of infection, which even now are confined to isolated centres. Play with curing these germ-centres, and a whole county may become contaminated. Some miles from here *one* stock in *one* apiary—in 1908, I think—introduced "Isle of Wight" disease. Close by were three apiaries of about ten, twenty, and over forty stocks, and a host of smaller ones. To-day, the region around is beeless. Nay, more; hives from the contaminated apiary were sold at an auction sale two years ago. The consequence is that outbreaks manifested themselves ten or twelve miles lower down the valley, and many apiaries are now in process of becoming extinct, while scores more are being infected I have no doubt, to be wiped out next season in all probability. One visit from an inspector would have saved all this wanton destruction of valuable property. This is only one case amongst thousands. Some years ago I imported a swarm from a southern English county. It died out, but not before infecting five neighbouring colonies; and from then onwards the scourge has continued and practically wiped out my apiary. If I had known then what I know now the first stock lost would have been the last!

Isolated cases of "Isle of Wight" disease have been experienced in, at least, Aberdeen, Banff, Moray, Inverness, and Ross. At present every single case is a menace to the industry all over the county in which it is found, because each is a hotbed of the disease, with germs and spores sufficient to contaminate every apiary in all our northern counties.

A well-known opponent of legislation quite recently wrote me citing a number of cases at which he was inclined to jest. One was of an inspector from the Board of Agriculture (I did not know they had such officials) who diagnosed a case of "Isle of Wight" disease standing back several yards from the hive. Strange though it may sound to this fortunate bee-keeper, who never saw stocks suffering from this disease, this feat is quite a possible one! The action of the bees on the flight-board, in front of the hive, and on the ground further away than the mythical inspector stood, shows unmistakably that the bees are infected by this terrible malady. The signs indeed are so plain that anyone can tell. The Board of Agriculture, however, would never dream of appointing as inspector one who is not a practical bee-keeper with an intimate knowledge of the disease under treatment; and I presume that experts of some standing and practical experience will have a preference. My correspondent, ungraciously, I think, hinted in no measured way that only those who expected to reap benefits from the operation of an Act favoured legislation. Although I am an expert, such a thought never entered my head. Yet (and long before I became an expert) I have consistently advocated legislation granting inspection of apiaries, simply for the good it would do in controlling and wiping out disease. Legislation, with its consequent inspection, *has* done good—immense good—in every other country where it has been tried. If so, why not here?

Some maintain that inspectors or experts may become "carriers" of disease. The danger is possible, but scarcely probable. How very seldom do medical men carry infection, just because they take preventive measures to guard against the danger? Why should not "bee doctors" do likewise? But, really, there is very little danger. Objectors overlook the fact that inspectors under the Act would do very little, if any, handling of bees or hives in carrying out their duties. In diagnosing a case of foul brood a man who knows his work would carry out the whole process without touching any infected object but with the tips of his fingers, and immediately the examination was concluded these would be thoroughly sterilised—or better, washed and *brushed* until not a germ or spore was left to be carried to the next apiary. I should like to draw special attention to two admirable articles in "B.B.J.," Feb., 1905, by Dr. T. S. Elliott. The salient points in these deserve to be reprinted in leaflet form for the benefit of experts and beekeepers in general who have either form of disease in their apiaries. The signs and symptoms of "Isle of Wight" disease are so marked that the initiated can read them at a glance, especially at a period of the year when inspection work is likely to be carried out; but there would be a further effective check on any wrong diagnosis, because the bees, before destruction was ordered, would be examined by some scientific expert, such as Dr. Malden. Then, as to acting as a "carrier" of disease, why should an inspector do so? He need not handle bees, hives, or appliances: his duty would be to see that destruction was effectively carried out by others.



POLLEN OF MELILOTUS.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(Continued from page 292.)

No. 20. MELILOT (*Melilotus vulgaris; Melilotus officinalis*), etc.

NAT. ORDER. *Leguminosæ.*

The generic title of this plant at once suggests honey—*mel;* flower—*lotus,* or honey-flower; whilst *vulgaris* indicates that it is quite common. This is another of the leguminous plants so valuable to the bee-keeper, and although the inflorescence and growth are very different in appearance from the ordinary clovers, it was by early writers, and is still now, called sweet clover because of the spicy odour of its flowers. It is by some called plaister clover because of the medicinal virtues of the plant for that particular purpose. It is also sometimes called Bokhara clover (*Melilotus leucantha*).

There are numerous species and varieties of this plant; the most common and the particular one under consideration grows to a height of from 3ft. to 5ft., with white or yellow flowers, which are small and arranged in long racemes on one side of the stalk only. It has a very graceful upright growth. The leaves are trifoliate, the lower ones being compounded of leaflets that are much more rounded in form than the upper ones, which are usually more attenuated and linear. These racemes spring from the axils of the leaves. The corolla is of the Paplionaceous, or butterfly type, the colour of the flower varying in the different species from white to red and blue to purple, in addition to the yellow. It has ten stamens, one stigma, and the legume,

pod, or ovary contains one or two seeds.

Although it is largely grown for feeding stock, white melilotus is found wild in abundance in some districts in the fields and on pieces of waste ground, the yellow (*Melilotus officinalis*) not being met with frequently, and generally as an introduced plant. The time of flowering is from July to September. As it is very ornamental it is grown largely in gardens.

It is a fair producer of nectar, and the bees are constantly upon it, but in this locality I have not seen any sufficient quantity growing for forage, although it abounds on waste patches. Even in this restricted growth it must be helpful to our bees, but where it is grown in large quantities no doubt surplus would be obtained from it.

The pollen from this flower is yellow in colour, both by transmitted and reflected light, though somewhat paler in the latter case. When dry, the mature grains measure $\frac{1\frac{1}{2}}{1000}$ x $\frac{1}{1000}$ of an inch, and in general form are similar to white clover (*T. repens*) ("B.J.," 1910, p. 485): the pellicle of the grain is, however, smoother. This is seen at Figures 1 and 2, with enlargement; and a section through the centre of the grain is shown at No. 3.

It retains this form mostly in honey, but becomes more transparent, and changes its appearance to that shown in Figs. 4 and 5.

When abstracted from honey the three grooves or furrows extend outwards, and form a ridge from end to end with a small process in the centre, as seen at Figures 6 and 7 with enlargement. In this state the grain is very opaque, allowing very little light to pass through it; the measurements then being $\frac{1\frac{1}{2}}{1000}$ in. diameter.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ODDS AND ENDS ABOUT BEES.

[8546] As in Australia, we seldom have two equally good bee seasons in succession. There they term their alternate years the "off" ones: so in Scotland we often hear of the profitable years being every fourth one. Up till eight or nine years ago I was heartily in agreement with this assertion, but am now inclined to put the profitable year much oftener than one in four. My awakening came in this wise: Whilst arranging some stocks in early September for a friend I found one with three or four queen-cells almost ripe. I took off one of these, wrapped it up in some soft calico I chanced to have, and carried it home in my vest pocket and gave it to a stock which had done badly. I placed it upon a comb beyond the brood-nest. It was at once accepted, hatched out, and having deposed the worn-out queen the stock had a nice patch of brood before I closed down in October.

This was by far my most forward stock in spring, and about the 1st of June I put on a super of shallow-frames. The weather was warm and genial, and to my surprise the super was filled before any others were ready for supering. This stock gave me my first take of 104lb.

Since this experience I have strained every nerve to have the bees fit to super by June 1st. In 1911 I had nine stocks, which spread out in early May, and were supered on the 20th of that month, all except two reserved for increase. The average for these was 72lb., two giving over 100lb.

During this year I had nearly all ready by 1st June, except two developing from nuclei, which came into line a little later. Not a particle of honey was stored until the 28th of June, and the flow lasted until the 27th or 28th of July.

The average for eleven hives is 36lb. each. The moral is: Get the bees strong early, and if an early flow comes the colony is ready and willing, but if no flow arrives a hundredweight of sugar is profitably expended in making things hum.

My brick-heated nuclei did well—considerably above the average. Swarming came late in July, but queens of the nuclei set off them mated badly, seven out of fourteen being all right by the 4th of August. The others do not seem to have mated, although I saw them all fly several times. I bought the virgins from England. These I also saw fly repeatedly, but they did not commence to lay, and last week they disappeared. Two stocks which swarmed had not their queens laying to-day when I examined them, so I removed them and gave them mated ones. These stocks had killed off their drones and were being fed.

Two strong nuclei have still their drones and unmated queens, so I am purchasing a few queens to make sure for the future.

Keeping the Hives Water-tight has often been a source of worry to me, because in a dry season seams gape and never yield to paint alone. Puttying them with a putty-knife or chisel was often the work of weeks. This year I started early in July to stop up "the braks." I was industriously puttying and painting when a professional painter called, who advised me to make *white lead* putty.

This is done by working common whiting into the white lead until it does not stick to the fingers. Chancing to have an old plasterer's trowel I made use of it to work the putty on a board, and, without thinking, began to use it for applying the white lead putty to the seams and leaks. In less than two hours I had twenty hives waterproof, and then I had them all painted, and they have come through the last three weeks' rain without a drop inside. I advise all bee-keepers to try this tool. I have since used it for cleaning tops of frames, and find I have more command of it than of any other implement for the same purpose.

Lately I saw a runaway swarm in a strange abode. At the northern end of Loch Doon the outflow of the water is regulated by sluices. The tooth and pinion apparatus used to raise and lower these has a cross connection by means of a hollow cast-iron frame, 4ft. by 14in. by 9in. The bees had found their way into this through the interstices among the wheels.

There are four bee-keepers within three miles of this spot, but all can account for all their swarms. My own are six-and-a-quarter miles distant, and none were lost. Their parent hive could not be inside ten miles. The nearest bee-keeper is fully a mile from the foot of the loch, and he observed the swarm alight on a tree about his hives, where it remained for some time, and then made off over the famous Ness Glen in the direction of Loch Doon.

I visited this "runaway" in company with a gentleman who was anxious to secure it, but we were unable to invade its iron home. While busy inspecting the abode the gentleman's dog, having entered the water, was drawn into the sluice and sucked into the tunnel. We saw the poor brute emerge about 50yds. below the rocky tunnel, and in our endeavours to rescue it we both became involved in the torrent. Eventually we succeeded in bringing out the poor animal, but found that though life was not quite extinct we were unable to revive it.—D. V., Dunaskin.

BEE DISEASES BILL.

[8547] Mr. Ayles (page 346) is, I think, unduly alarmed as to the powers conferred on the local authority by Clause 2 of the above bill. The clause is permissive only, and not compulsory, and it is certainly advisable that in bad cases there should be power to order immediate destruction. In my opinion Clause 1 requires amending, so that the despatch of bees or appliances from a diseased apiary may be prevented; this could be done by inserting after the words "for preventing the introduction into" the words "and of circulation within," and after the words "regulate the introduction or admission into," the words "or circulation within," and omitting the words "by post."

Section (3) of Clause 3 should be omitted, for any officer taking proceedings should be required to produce his authority.

In Clause 5 section (1) the words "if he thinks fit" should be omitted; power should not be given to anyone but an expert to examine bees.—W. A. Carver, Castle Cary.

"ISLE OF WIGHT" DISEASE AND WASPS.

[8548] Having at the end of my first year of bee-keeping (1911) lost my two stocks with "Isle of Wight" disease, I am, to a certain degree, acquainted with its symptoms, and was interested when I kept coming across wasps in my house that, seemingly healthy, were quite unable to fly. I enclose a sample for your inspection, and should be interested to hear if others of your readers have found wasps suffering from the disease.

I started again this year with a small stock on six frames in June, and must feel quite satisfied that I shall winter a strong, healthy stock on ten frames, as well as having obtained 12lb. surplus.—Dabro.

[That wasps do suffer from *Microsporidiosis* ("Isle of Wight" disease) has been demonstrated by Drs. Fantham and Porter, and particulars of such cases will be found on page 130 of the Board of Agriculture report on the "Isle of Wight" disease. You have done well with your small stock, and I trust that it may remain immune from the disease which has caused such mortality in your district.—Ed.]

"ISLE OF WIGHT" DISEASE.

EXPERIENCES IN CURING THE DISEASE.

[8549] In view of the powers proposed to be given to local authorities in the Bee Diseases Bill, my experience in connection with "Isle of Wight" disease may be of some interest to your readers. In an apiary of about forty hives the disease was introduced in 1910 by one or more swarms from another part of the country. It is a somewhat isolated apiary, the nearest hives being some three or four miles distant. By the autumn of 1911 all the black bees—in about twenty hives—had taken the disease, each shortly after the symptoms appeared being destroyed, except one to which, though decidedly affected, a Ligurian queen was introduced. Some of the young Ligurian bees showed symptoms of the disease, but the stock recovered, and, though not strong,

survived the winter, and is now perfectly healthy. In 1910 a Ligurian queen had been introduced into a hive of blacks. That hive, though standing between hives of blacks that took the disease, did not become affected. This year it has swarmed, and both old hive and swarm are strong and perfectly healthy. Here, therefore, my experience seems to confirm that of Mr. Anderson (page 333). Some hives of hybrids took the disease as well as the blacks, and were destroyed. During 1911-12 there were some winter losses, and in the late spring of this year the apiary comprised only nine stocks: Ligurians, Ligurian-Carniolan hybrids, and Ligurian-black hybrids. Five of the hives, being short of stores, were fed in the spring from bottles with sugar medicated with the Simmins' cure. They showed no symptoms of disease, and later were transferred to hives treated with the Ayles' preventive. To increase the stock they were permitted to swarm. One swarmed once, one twice, one thrice; two did not swarm. The swarms were placed in hives treated with the Ayles' preventive, though some difficulty was found in inducing the casts to enter hives so treated, and it could be done only in the late evening. Both old and new stocks are perfectly healthy, and are working splendidly when weather permits.

In regard to the other stocks which had not been fed with the Simmins' cure, two began to show symptoms of the disease in the beginning of the summer. Their transference to hives treated with the Ayles' preventive seemed to check the disease, but owing to the strength of the colonies the doors could not be narrowed to the extent which Mr. Ayles recommends, and after the bad June the disease appeared in a more virulent form, while it also showed itself in the other two hives to which nothing had been done. They all, however threw strong swarms, two in each case joining together. They also threw seconds, but only in one case was the swarm taken. Though placed in treated hives the swarms were much too large to permit of narrowing the doors. In the fine weather they, though dwindling rapidly from the disease, filled hives with comb, honey, and brood. Within three weeks most of the old bees had perished. One stock being threatened with robbers was destroyed; the other was kept to see what would become of it, and the fewness of bees going in and out made it possible to narrow the door to about half-an-inch. The young bees had now begun to hatch out, but so hopeless did its case appear to be that I had intended its destruction, when during a burst of sunshine after some dull weather I was surprised at the sight of a splendid flourish of bees in front of it. I have also had similar experience in the case of a second hive. Both hives have for weeks been working vigorously, and show no symptoms of disease. In regard to the four old hives, the Ayles' preventive seems to be holding the disease in check, and probably a cure may be effected with the hatching of the young bees and the narrowing of doors in the late autumn.

I attribute the complete cure of the young stocks to the rapid disappearance of the old diseased bees and the effect of the Ayles' cure after it was possible to narrow the doors. From my experience generally I think the following inferences may also be fairly drawn:—(1) Black bees are more apt to succumb to the disease than Ligurians or pure hybrids; (2) Ligurians are almost, or in the majority of cases, immune; (3) pure or non-mongrel hybrids, though not so immune as pure Ligurians, are more immune than blacks; (4) the Ayles' remedy is a certain, or almost certain preventive; (5) it may be used in such a way as to become a cure, even in the worst cases, by breeding out the disease; and (6) though I have not experimented so fully with the Simmins' cure, it would appear that, used in syrup in spring, it probably proved to be preventive.

In any case, I think there is clear proof that the disease is curable by the intelligent use of remedies, and that the policy of merely stamping it out would be a deplorable one. I therefore agree with Mr. Ayles—with whom I may say I have no personal acquaintance—that some amendment to Clause 2 of the Bee Diseases Bill is desirable. One has full confidence in the Board of Agriculture and its advisers, but local authorities are not necessarily so well instructed, and may be influenced more or less by paniemongers.—IGNOTUS.

VISITING CORNISH BEE-KEEPERS.

[8550] Having just returned from a holiday in Cornwall (finding no place to equal it in scenery and climate) I thought your readers might like to hear about my experiences in apiculture while there.

I must begin by saying that I have a touch of the bee fever, having started a couple of hives in the spring. In our rambles round Falmouth and the neighbouring villages bee-hives seemed to be conspicuous by their absence. I repeatedly advised cottagers, who lamented the scarcity of fruit this year, to keep bees, explaining the advantages that would accrue to them thereby. Their invariable answer was: "We don't belong to understand bees," and of course the lack of instruction and initial expense are doubtless great obstacles. When visiting the old Roman burying ground at

Trevera on the Lizard Road, a desolate spot adjacent to, or rather forming part of, a farm, a hive attracted my attention, and the owner, a Mr. Pope, informed me that bees had been on his farm for thirty years. I promised him to return next year (when I shall hope to be cleverer in manipulating bees), and remove the combs and honey for him.

Having read an article on bee-keeping by a Mr. Stapleton, of Church Town, Gwinear Road, I determined to visit his apiary, and was well repaid for my trouble by the information he gave me. If there were more men like him, apiculture in Cornwall would make giant strides forward. We found his apiary without difficulty, about a mile distant from Gwinear Road Station, ninety hives occupying the small garden in front of his cottage. Mr. Stapleton received us with the usual Cornish friendliness, and for an hour we "talked bees hard." I found that he supplies hives, bees, &c., at a cheap rate, and looks after the bees for two years after their purchase! Imagine the immense advantage to the purchaser; they become a delight instead of an anxiety, and often a worry to the novice. After twenty-five years' study and spending £50 on experiments, Mr. Stapleton claims to have found out an infallible cure for the "Isle of Wight" disease, and this cure does not entail the destruction of combs or frames. His numerous stocks were at one time reduced to eleven, but he at last succeeded in curing them, and since then finds that "prevention is better than cure." Surely, in the near future, we shall hear more of Mr. Stapleton and his methods! My children at last induced me to continue our walk across Phillack Towans to Carbis Bay, a delightful ramble, but if I had been alone I should have remained in Gwinear Church Town "talking bees" with Mr. Stapleton.—M. DE A., New Malden.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

Many readers will envy Mr. Varty the delightful situation of his apiary shown below. He gives an interesting account of his bee-keeping career, which, we are pleased to hear, has proved a successful one, providing both pleasure and profit for himself and his family. He writes as follows:—

MR. E. VARTY'S APIARY, DISEWORTH, DERBY.

It is now about twenty-one years since I first commenced bee-keeping, by purchasing a cast of bees in a skep for 2s. 6d. from a skeppist in a village a few miles distant, where I had been with one of my brothers driving bees. We brought back several lots of driven bees, besides the small stock in the skep, which I at once fixed on the stand I had prepared for it. My brother, wanting a young queen for a strong stock, took out one from the driven lots, and forgot to cover up the bees. Of course, as soon as they found themselves queenless, they all rose in the air. He then let the queen fly to gather the

bees together, and as they were familiar with skeps only, they settled down on my skep, it being the only one in the garden, and very soon made themselves at home, at the expense of my poor cast, which lay dead at the bottom of the skep. Exchange in that case was no robbery, as I got a good strong lot for a weak one, and by driving bees and dividing stocks, I have increased to the number seen in the illustration. It is only of late years, however, that I have taken to bee-keeping with a view to making a living in the summer months, as I am fully employed during the winter. If properly managed, bee-keeping is a very profitable business. I have taken from 20 up to 105lb. of honey (the latter being my largest take) from one stock, which I consider good in a district where there is no heather. I have won a good many prizes at local and county shows for extracted honey and wax and comb honey, although I have not worked for comb honey of late years, as there is very little sale for it in my district. I gained my third class certificate in 1908, though I think I could have got it a considerable number of years earlier had I troubled to do so. For the general knowledge which I have accumulated I am principally indebted to guide books and the "B.B.J.," in which I was pleased to read that there are prospects of soon having an Act to deal with bee diseases, as there is nothing so disheartening as to have one's bees contract foul brood or any of its kindred diseases, perhaps through a stupid neighbour who does not understand the disease himself, and is offended beyond measure if you should even hint that his bees are not healthy. One bee-keeper whom I visited refused to be convinced that his bees had it till I offered to send the comb up to headquarters. I believe that if the Act causes any bee-keepers to give up their bees, it will be those who are no credit to the craft. The weather is very cold here, and my bees have no more honey in the supers than they had a week ago.

BRIEF REPORTS.

The season 1912 opened well, and gave great promise, stocks being very forward and swarms common in the early part of May. In the fruit districts supers of honey from fruit blossom were obtained, and even where no surplus was stored there was sufficient honey brought in to do away with the need of feeding. June opened and continued in bad weather, and the stored honey was quickly used up in brood-rearing. Only about ten days of ideal honey weather have been experienced, that being early in July, when it was a treat to see the stocks working. After that, those bee-keepers who took off the supers at once obtained the most honey, for none has come in since, the season having been cold and wet. My best stock has given me about 40lb. of honey, and I should say that on the whole the returns generally are rather poor. I seriously considered taking my bees to the heather, but as the weather showed no signs of improvement kept postponing the event. I am glad now that I did so, for I am certain that I have saved cost of carriage, as there has been no weather suitable for honey-gathering on the moors. Bee-keepers must look well to winter feeding, as there is very little honey stored in the brood-chambers. Generally, after the main flow is over, a little keeps coming in sufficient to supply the bees' needs for the time and to allow them to store for winter, but it has not been so this year.—D. Wilson, Derbyshire.

The bee season here is, I think, the worst on record. Many bee-keepers have been heard to say, "Never knew anything like it." It certainly has been a peculiar one, and never anticipated in any bee book. The spring was very fine, and bees built up fast; instead of getting a crop of spring honey, bee-keepers caused strong stocks to help the weak, with the idea of getting all strong when the "flow" came. But, alas! it has never come, except for less than a week in the middle of July, and then bumper swarms came out with queen-cells only just begun. All through June it seemed as though the bees did not know what to do, one week building up queen-cells and the next killing off the drones; and this also applies to July and August. The loss of bee life through adverse weather has been greater than through work. On some days I have noticed they have turned out gaily as though summer had really come, but before they have reached home with their load a drenching rain has come on, and chilling is the result.

Abnormal numbers on the alighting-board necessitated special extension. Hope has never perished, and to-day, Aug. 31st., the bees are working as well as in the summer, trying to make up for the lost time.—John M. Best, St. Austell.

Bees started well in May, and it seemed as if a good season was in store, but the rain in June, July, and August put an end to all hopes, many stocks dying of starvation. I have seven hives, and have only taken a few sections up to now, but hope they may do more on the heather. —W. H. Aisholt, Bridgwater.

An abnormal season. Early honey plentiful, and swarming consequently excessive. Main flow partially spoilt by incessant rains, although they protracted the secretion of nectar by the clover.

Heather now in full bloom, and bees working on catch crops such as sheep scabious, eschscholtzia, golden rod, and mignonette. All swarms have done well, and are well provided for winter. Doubtless, inclement weather has induced the bees to store in the brood-chamber.—GEO. STEVENTON, Bisley.

Queries and Replies.

[8525] *Utilising Driven Bees.*—Will you please answer the following questions in the "B.B.J."? I have been promised some driven bees when the heather season is over. All my hives have gone to the moors except one, which was not strong enough, so I decided to utilise this stock by giving new sheets of foundation in the brood nest to draw out and fill with honey and syrup to give to the driven bees. This I did, and commenced feeding with thin syrup on August 24, as the weather was very bad just then. Since then there have been some honey gathering days, and it has taken the bees until to-day, Sept. 2, to take down 11b. of syrup. When I made an examination to see if any of the combs were ready to take out and replace with foundation I found nearly all partly filled with honey, mostly unsealed, very little brood, and not much room for the queen to lay. (1) Do you recommend the plan, or that of giving the driven bees combs of foundation and feeding direct? (2) The combs in the old hive were absolutely clogged with pollen, so I removed five at once and replaced with foundation. Should I have given one at a time? I had put three new frames of foundation in some time before, and these were all drawn out and filled with brood from top to bottom when I examined on August 24; but on September 2 much of this brood was hatched and the cells filled with honey. (3) Is there anything I omitted in the operation? (4) There is a good deal of ragwort in this district: is it of much value to the bees?—J. S. R., Sand Hutton.

REPLY.—(1) Your first plan is better than giving the driven bees foundation so late in the season. (2) Two at a time would have been enough. (3) No. (4) Honey from ragwort is useful to the bees, but not of good enough quality for selling.

[8526] *Preparing Bees for Winter.*—May I again appeal to your valuable columns for advice? I have seven stocks of bees. I have just examined four of them. In each case I find plenty of bees, but in the brood-chamber they have consumed all the honey, or practically so. Nearly all the brood has hatched out, but the fine weather of the last three days has caused the queens to start laying again. There is some honey in the remaining super of shallow frames still left on. (1) Ought I at once to commence rapid feeding? (2) Should this be done *above* the shallow frames? (3) Should I in this case remove the zinc excluder to enable the queen to get at the honey in the shallow frames? (4) How should I leave them for the winter? Considering the weather, my bees have done fairly well—about 400lb.—N. A. H., Canterbury.

REPLY.—(1) Yes. (2) Take off the shallow frame super; and (3) remove the excluder. (4) Winter down in the usual way without the super, but making winter passages over the frames.

[8527] *Feeding-up for Winter.*—Would you kindly answer the following questions in Queries in your next week's "B.B.J."?—(1) Would Demerara sugar be suitable for making syrup for bees to winter on? (2) Will it be too late to go on with stimulative feeding to the end of this month, and then finish up with a fortnight's rapid feeding with the thick syrup, to carry them safely through the winter? The bees are on five and six frames, with very little stores at present. I am a novice in bee-keeping, and find your "B.B.J." a great help.—H. W., Peterborough.

REPLY.—(1) Demerara sugar should never be used for autumn or winter food. Use only refined pure cane sugar. (2) Stimulative feeding may be continued until the middle of September, then use the rapid feeder; all food should be sealed over by the end of the month.

[8528] *Winter Stores.*—I shall be greatly obliged if you will give me information on the following points in the "B.B.J.":—I started with one swarm on June 21, which I hived on seven frames, and later added three more. These all contain stores, the outside frames are full, the next two two-thirds full, and the centre ones half full of honey and brood, sealed and unsealed. Will this be enough for the bees to winter on, or need I give them more syrup and up to what date may I feed if needful? Some of the stores were not sealed on August 31. Will the bees seal these before the end of this month, as Harrison's "Book of the Honey Bee" says that all unsealed stores should be extracted before the winter?—"NOVICE," Malden.

REPLY.—Give the bees about 10lb. of sugar, made into syrup as per "Guide Book" recipe for autumn food. They will then seal it over before winter.

Notices to Correspondents.

R. C. (Forres, N.B.).—*Foundation.*—The light foundation is the better of your two samples, and, being thicker than the dark one, it is consequently the

heavier. We are pleased to hear that you have found the "Guide Book" so useful.

MONMOUTH (Mon.).—*Late Storing in Supers.*—Leave the bees alone for the present, and remove the supers later, when, if the honey has not been carried down, extract it, and use it for feeding the bees.

R. S. (Norfolk).—*Drowned Brood.*—We are sorry to hear of your disaster, and unfortunately your case is not the only one, as many others have suffered through the floods. (1) The few bees remaining are not likely to clear out the brood before it becomes corrupted, and the colony could not recover by winter. (2) The dead brood would become rotten and induce disease. (3) Remove and destroy combs containing dead brood, dry the others and put them into a dry hive, then introduce what bees you have saved, if they have a queen, and feed up.

J. A. (Leicester).—*Exhibiting Observatory Hive.*—The face of the combs should be easily seen. Worker, drone, and queen cells should be present, the two former containing eggs and brood in all stages. Hive should be properly ventilated, and, needless to say, no disease present. There should be queen, drones, and workers in the hive, which should not be too crowded. Full particulars of exhibiting everything connected with bees are given in "Producing, Preparing, Exhibiting and Judging Bee Produce," by W. Herrod.

APIARY (Hereford).—*Dead Bees in Super.*—So far as we can see, the bees have died from starvation. In dull, cold weather bees will occasionally refuse to go through the "Porter" bee-escape.

L. A. SNOW (Worcester).—*Rendering Old Combs.*—(1) Old combs contain a quantity of cocoons and very little wax. If you could apply pressure to the heated mass you would get out what little there is from the debris. (2) The end of September is very late to introduce a fertile queen. You should do it at once.

THEODOSIA (S. Wales).—*Rendering Cappings.*—We find nothing wrong with the honey sent. Heat the honey sufficiently to melt the wax, and allow it to stand until cold, when the latter can be lifted off in a cake. The honey should then be strained, and the wax-powder melted by placing it in a porcelain jar, standing this in water and heating until the wax melts, then strain through *old* flannel into a proper mould.

Honey Samples.

A. H. B. (Cheltenham).—The honey is of good quality, light in colour, density fair, and flavour and aroma good. It has been gathered from clover and sainfoin.

T. R. (Crosby).—The honey is from ragwort, and this accounts for its disagreeable aroma and flavour.

A. B. C. (Lichfield).—One sample is a very good dark honey from mixed sources, the other being a light clover honey, good in all respects except density, which is only fair.

A. H. H. (Birmingham).—Not of good quality, and worth about 5d. wholesale and 8d. retail.

M. C. B. (Heaton Moor).—A light-coloured honey of good density, flavour, and aroma.

Suspected Disease.

K. E. P. (Caterham).—The bees have "Isle of Wight" disease; the disjointed wings is one of the symptoms.

H. B. (Stourport).—(1) There are slight symptoms of "Isle of Wight" disease. (2) It is difficult to say, but we think a shorter time than you give.

F. W. T. (Salop)—The bees have "Isle of Wight" disease. Try Ayles' Cure. No fee is charged for our opinion. Thanks for your kind appreciation of the BEE JOURNAL.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FINEST EXTRACTED HONEY, 58s. cwt., in 28lb. tins, packages free; sample, 2d.—W. BARNES, Exning, near Newmarket. v 39

WILTSHIRE EXTRACTED HONEY, 60lb. tin, 28s.; 28lb. tin, 14s.—R. JOHNSON, Little Hinton, Swindon. v 20

DRIVEN BEES require healthy drawn combs, 4d. each. What offers several hundred Journals?—WARREN, Terrace, Hathern. v 22

SUPERIOR North Lincolnshire Clover Honey, 56lb., 38s.—SMITH, decorator, Caistor. v 27

FINE SECTIONS CLOVER HONEY, 8s. 6d. dozen.—E. BRUNETTE, Hovefield's Farm, Wickford, Essex. v 28

1CWT. of finest light Honey, in 28lb. tins, 63s., free on rail.—E. MARSHMAN, Little Linford, Wolverton. v 29

FEW young Fertile Queens for sale, guaranteed healthy, 1s. 6d. each.—J. YOUNGER, 21, Mackenzie-road, Cambridge. v 30

GOOD Royal Sovereign Strawberry Runners, 1s. 6d. per 100, paid.—MARSH, Sayerland, Polegate. v 31

WANTED, EXTRACTOR, geared, must be in good condition; state price for cash, or exchange Driven Bees.—SPINK, Roseville-terrace, Crossgates, Leeds. v 32

Editorial, Notices, &c.

SHROPSHIRE B.K.A.

The members of the Shropshire Bee-keepers' Association always provide an interesting and attractive exhibition for visitors to the annual floral fête held at The Quarry, Shrewsbury, and on August 21 and 22 many hundreds of people passed through the marquee in which the honey and apiarian appliances were displayed. The season generally has been adverse for bee-keepers, but produce of excellent quality was to be seen in competition, over 2,000lb. of honey being staged, the light coloured kind being exceptionally good. The British Bee-keepers' Association silver medal was awarded to Mr. S. Cartwright, and the bronze medal to Mr. H. R. Millington. The judges were the Rev. J. T. Evans (Rock Ferry) and Mr. J. Wooton (Hereford). The following is a list of awards:

HONEY CLASSES (OPEN).

Twenty-four 1-*lb. Sections.*—1st, J. Rogers, Shawbury; 2nd, F. E. Holmes, Welshpool.

Twelve 1-*lb. Sections.*—1st, Mrs. J. Beech, Gnosall; 2nd, G. Evans, Bromstead; 3rd, J. G. Nicholson, Langwathby, Cumberland.

Twenty-four 1-*lb. Jars of Extracted Honey.*—1st, S. Cartwright, Shawbury; 2nd, F. C. Holmes; 3rd, H. R. Millington, Wistanswick; reserve and h.c., R. Morgan, Cowbridge.

Twelve 1-*lb. Jars of Extracted Honey.*—1st, R. Morgan; 2nd, W. H. Barlow, Knutsford; 3rd, E. Church, Cardiff; reserve and h.c., F. C. Holmes; v.h.c., A. H. Bowen, Cheltenham; h.c., H. R. Millington, J. Tudor; c., H. R. Eddowes, H. Crowther.

Twelve Jars of Medium-coloured Honey.—1st, J. Berry, Llanrwst; 2nd, W. Jones, Llanfair; 3rd, E. W. Shuker, Middleton Scriven, and C. T. Pugh, Shrewsbury.

Twelve Jars of Dark Honey.—1st, J. Berry; 2nd, J. Davenport, Astley; 3rd, C. T. Pugh.

Single 1-*lb. Jar of Extracted Honey.*—1st, F. C. Holmes; 2nd, H. R. Millington; 3rd, T. Tudor, Little Drayton; v.h.c., W. Jones, Welshpool; h.c., S. Cartwright.

Single 1-*lb. Section.*—1st, T. Tudor; 2nd, W. H. Barlow; 3rd, H. Crowther; v.h.c., H. Crowther; h.c., F. C. Holmes.

(Members of the Shropshire B.K.A. only.)

Twenty-four 1-*lb. Sections.*—1st, S. Cartwright; 2nd, P. Jones, Church Stretton.

Twelve 1-*lb. Sections.*—1st, H. R. Millington; 2nd, P. Jones; 3rd, H. E. Pope, Montford.

Twenty-four 1-*lb. Jars of Extracted Honey.*—H. R. Millington; 2nd, S. Cartwright; 3rd, F. W. Morris, Church Stretton.

Twelve 1-*lb. Jars of Extracted Honey.*—1st, H. R. Millington; 2nd, S. Cartwright; 3rd, W. Shuker.

Twelve 1-*lb. Jars of Medium-coloured Honey.*—1st, J. Davenport; 2nd, S. D. Brookes, Red Barn, Shrewsbury; 3rd, F. W. Morris.

Twelve 1-*lb. Jars of Dark-coloured Honey.*—1st, J. Davenport; 2nd, P. Jones; 3rd, W. Shuker.

Twelve 1-*lb. Jars of Granulated Honey.*—1st, H. R. Millington; 2nd, S. Cartwright.

(Artisan members of the S.B.K.A. only.)

Twelve 1-*lb. Sections.*—1st, T. Tudor, Little Drayton; 2nd, J. Rogers; 3rd, E. Brookfield, Myddle.

Twelve 1-*lb. Jars of Extracted Honey.*—1st, T. Tudor; 2nd, E. Brookfield; 3rd, J. Mills, Shavington.

Six 1-*lb. Jars of Extracted Honey.*—1st, J. Rogers, Shawbury; 2nd, H. R. Eddowes; 3rd, E. Brookfield.

Six 1-*lb. Jars of Medium-coloured Honey.*—1st, F. W. Smallwood, Ford; 2nd, J. S. Lawton, Bridgnorth; 3rd, M. Strang, Shrewsbury.

(Cottagers only.)

Six 1-*lb. Sections of Comb Honey.*—1st, R. H. Elson, Wellington; 2nd, J. Bright, Baschurch; 3rd, G. Butler, Blore Heath.

Twelve 1-*lb. Sections of Extracted Honey.*—1st, P. Glover; 2nd, J. Bright; 3rd, G. Butler.

Six 1-*lb. Jars of Extracted Honey.*—1st, J. Wynn, Rowton; 2nd, J. Chetwood, Noneley; 3rd, P. Glover.

Six 1-*lb. Jars of Medium-coloured Honey.*—1st, J. Bright, Little Ness; 2nd, J. Chetwood.

Trophy of Honey.—1, F. C. Holmes.

HIVES AND APPLIANCES.

Hive Suitable for Modern Bee-keeping.—1st, Little and Cooper, Shrewsbury; 2nd, G. Rose, Liverpool.

Collection of Apiarian Appliances.—1st, Little and Cooper; 2nd, G. Rose.

Beeswax.—1st, G. Evans; 2nd, H. R. Millington; 3rd, F. C. Holmes.

Special prize for Collection of Honey Gathered from Various Kinds of Flowers since 1887.—A. Beale, Meole Brace, Shrewsbury.—*Communicated.*

CRAYFORD AND DISTRICT B.K.A.

The sixth annual show of the above Association was held at Orchard House, Crayford, on Saturday, August 31st, by kind permission of the Vice-President, Mr. E. R. Stoneham, who also entertained the members and friends at tea. The entries numbered 142—more than have ever before been received in the Association's history,

the nearest approach being last year, when there were 104. Mr. Herrod, who usually acts as judge at these events, being unavoidably absent, the work was carried out by Mr. J. Smallwood, of Hendon.

The silver medal, kindly presented by Mr. Herrod to the most successful competitor, was won by Mr. Bryden, of Rochester, with 35 points.

The awards were as follows:—

Three 1-lb. Sections.—1st, G. Bryden; 2nd, G. Judge; 3rd, J. Roper; h.c., Mrs. Paulin and W. Heasleden.

Six 1-lb. Sections.—1st, G. Judge; 2nd, G. Bryden; 3rd, Miss Brooks; h.c., Miss Smiles.

Three Jars of Light Extracted Honey.—1st, W. Heasleden; 2nd, S. Lee; 3rd, — Cook; h.c., — Porter and G. Bryden.

Three Jars Medium Extracted Honey.—1st, Miss Smiles; 2nd, G. Bryden; 3rd, — Rivers; h.c., G. Judge and Miss Brooks.

Three Jars of Dark Extracted Honey.—1st, G. Bryden; 2nd, G. Judge; 3rd, S. Lee.

Three Shallow Frames.—1st, G. Bryden; 2nd, — Ashdown; 3rd, E. R. Stoneham.

Home-made Bee Appliances.—1st, G. Bryden; 2nd, G. W. Barnes; 3rd, A. Wigley; h.c., — Norris and W. Heasleden.

Beeswax.—1st, G. Judge; 2nd, — Rivers; 3rd, Miss Smiles; h.c., S. Lee.

Bee Produce.—1st, Mrs. Simms; 2nd, Mrs. Smiles; 3rd, G. Bryden; 4th, G. W. Barnes.

Two Jars of Granulated Honey.—1st, G. Judge; 2nd, G. Bryden; 3rd, Miss Smiles; h.c., S. Lee.

Single 1-lb. Jar (Gift Class).—1st, Miss Smiles; 2nd, G. Bryden; 3rd, S. Lee; h.c., — Rivers and E. R. Stoneham.

Single 1-lb. Section (Gift Class).—1st, G. Bryden; 2nd, Mrs. Paulin; 3rd, G. Judge; h.c., Miss Brooks and Miss Smiles.

The President (Mr. S. K. Keyes) presented a "W.B.C." hive to be raffled for, and this was won by Mr. Barnes. A special exhibit of home-made bee appliances was shown by Mr. Wigley, of Gravesend, which was very interesting, and reflected great credit upon the maker. Hearty votes of thanks to the President, Vice-President, and Secretary concluded a very successful show.—*Communicated.*

THE B.B.K.A. EXPERIMENTAL APIARY.

The first of the special lectures in connection with the Development Grant was given in the Lecture Hall of the Zoological Society on Tuesday, September 11th, by Mr. F. W. L. Sladen, F.E.S., on "Mendelian Methods Applied to Apiculture." There was a very large audience, and those present listened with the greatest attention to the lecturer's exposition of one of the most interesting of all sciences, and its relation to apiculture.

The chair was taken by Sir Ernest Spencer, supported by Mr. T. W. Cowan. The chairman, in introducing the lecturer, spoke of the large amount of work he had done for the benefit of the craft. He was both pleased and sorry to say that Mr. Sladen had received an important appointment as entomologist to the Canadian Government—pleased on account of the personal honour and advancement for Mr. Sladen, and sorry because we in this country were losing one of our ablest men.

Mr. Sladen then spoke for an hour and a half, after which Mr. Cowan proposed a hearty vote of thanks to the lecturer for his admirable address on a complicated subject. He also remarked that he had known Mr. Sladen for over twenty years as a bee-keeper, and all would agree with him when he said that they were very sorry to lose him. Doubtless they would hear from him from time to time as to his progress in the important post he had obtained. They wished him good-bye and God-speed on his journey.

Mr. Sladen briefly replied, and a vote of thanks to Sir Ernest Spencer for presiding brought the meeting to a close.

We hope to give Mr. Sladen's lecture in full in our columns during the winter.

OBITUARY.

It is with much regret we announce the sudden passing away on August 21st of the wife of our valued contributor, Mr. D. M. Macdonald. We feel certain we are only voicing the sentiments of all our readers in offering our deepest sympathy to and commiseration with Mr. Macdonald and his family in their irreparable loss, under such tragic circumstances.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of August, 1912, was £3796.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

AMONG THE BEES.

By D. M. Macdonald, Banff.

CHECKING SWARMING.

It is a well-known fact that our most prolific queens can fill more space than is available in a ten-frame body-box, and it is quite a common practice to place another similar body-box either above or below, allowing the queen the full range of the twenty frames. With a very prolific queen most of these will be found more or less occupied by brood in the height of the

season. The following procedure may be recommended for experiment. When the first ten frames are pretty well filled up with eggs, larvæ, just hatching bees, and some honey, lift them temporarily aside, hunt for the frame on which the queen is parading and transfer it to a second body-box placed on the original floor-board. This should be fitted out with frames of comb for preference. Body-box No. 1 can then be raised on top of No. 2. Here we have ample space for the queen's laying and the workers storing until she drives them with their loads to the supers, when all the lower set of frames are required for eggs and brood. Theoretically, this may take place in about ten days, but perhaps a fortnight may be given. By this time most of the brood in the hitherto upper body-box will have hatched out, leaving, in all probability, all the central frames clear. Now exchange body-boxes, placing the top one below, transferring the queen again to this compartment of the hive. Here we have a *laying* brood-nest and a *hatching* one, each division occupying the various positions every alternate fortnight or so. *Switching* bees into separate compartments by ingenious slides, or by shifting the separate bodies to left and right, has been successfully experimented with, and we have various "devices" to carry out this end. Simpler than either of these, and more likely to be successful, because more under the immediate control of the bee-keeper, is this newer system I am now advocating. The queen, being very amply provided with room for ovipositing, carries on her duties without intermission, and as a consequence a very strong force of bees is secured by the date of the chief honey-flow.

For such a late harvest as the heather this plan should work out admirably in a good year. All April, May, June, and July the chief aim has been *to get bees*. Then, when the desire for swarming has been thus long controlled, it may be safe to confine the queen to one set of frames, and the bees to the same area plus the supers. These mighty battalions thus confined to the contracted brood space are bound to seek the surplus chambers for cells to consign their loads when they return from the foraging grounds. The combs of brood from the second body-box may be divided into nucleus lots or given to medium hives to strengthen them before they are taken to the moors to reap a second harvest from this desirable source.

Bees in Books.—"A party of holiday-seekers from the city found the music of the brook and the tree blending with the song of the scythe and the whispering of the leaves, while the woods were waving censers, the broom, the gorse, the heather, the wild flowers were a delight, and the wide-spreading limes were ahum with innumerable bees, and heavy with sweet perfume. In the garden they drank in sunlight and perfume as in draughts of an enchanted vintage. Birds and bees kept them company, filling the air with dreamy harmonies."

The Princess of the Honeycomb.—"She keeps bees, and we call her the hive princess, or the Princess of the Honeycomb. The bees adore her, so she is all right, for the beauty of it is that bees wont have anything to do with anyone who is not respectable. She sells the honey, you know; at first she used to send it to London, but presently everyone began to buy it here, so we live on honey. It is so wonderful her earning her living with bees, and the way she gathers them in handfuls is most interesting. She said one day, 'I approve, if I am quite, quite sure my bees approve of you.' He remembered what he had heard about the morality of bees, their Puritanism. Then there were policemen that were not human, policemen in the animal world among the flowers. The bees had shown that he was strictly moral! The night was lovely, the air was heavy with honeysuckle and jessamine and mignonette, and from the hives came the smell of the honey."

Lucas Cleeve, in the above extract, treads somewhat in the footsteps of Maeterlinck and Mahomet; but the idea is even more ancient. The prescience of the bee enables it to discriminate between good and evil, to pick out the sinner among saints! Why not? A dog takes instinctively to an innocent child, and its instinct enables it to spot the gentle and kind in man or woman at the very first glance. May not the gentleness of the bee be set down to some such instinct?

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ELEMENTARY SCHOOLS AND BEE-KEEPING IN THE BLACK-COUNTRY.

[8551] I have had considerable experience in bee-keeping in country districts, and when in January, 1911, I came to live in this district, far removed from any green fields or orchards, or any of the delights of the country, I parted, at a considerable sacrifice, with my stocks of bees. To my surprise, however, last summer I discovered the old pit-mounds, old cinder-mounds, and canal sides producing a most

prolific crop of white clover. The surprise was no greater than the pleasure it gave me to see this favourite flower of bee-keepers. I have been fortunate enough to secure a garden for fourteen of the boys attending my school. For hand and eye training last winter we made a hive in school out of old, though good, timber. On 15th of May I received a colony of bees on six frames, and with my young gardeners transferred them to the hive. Their arrival excited no small interest in the school and immediate neighbourhood. Four frames of foundation were given them, and, with the fine weather, they were soon busy.

On 19th of June a large swarm issued, though I had put on a rack of sections, which the bees never attempted to work. I might mention that I had taken out two of the new frames, which were well worked out, in order to crowd the bees into the sections. The boys and I at once replaced these frames, and successfully returned the swarm to the hive, also putting on a second rack of sections.

On 23rd of June the stock swarmed again, but while making preparations to return the swarm I found that it went back to the hive. When the bees swarmed on the first occasion I of course cut away all the queen-cells before returning the swarm.

On the 4th of July the swarm issued again. The boys and I again returned it to the hive, after removing the queen-cells, from which, by the way, we had four queens—two remarkably fine black ones and the others much smaller and lighter in colour.

Of course, I had taken as part of my Nature study course "Bees and Bee-keeping." In answer to my questions on the cause of this persistent swarming, one bright boy suggested that in constructing our hive, which is made of timber 1in. thick, we had only left one hole in the roof for ventilation. Acting on his suggestion, we made two more. Result: No more trouble with swarms.

The dividers in the racks of sections we made in school with cardboard which we use for cardboard modelling. After the bees started work in the sections, we were much puzzled by seeing outside the hive little heaps of what appeared to be cotton-wool. The bees had started tearing up the cardboard to shreds and carrying it out of the hive. At least, one half was so carried out by them, and the remainder as quickly as possible by us, and wooden dividers put in its place.

The boys, at the visit of His Majesty's Inspector, opened the hive and showed him the various parts, and were left to replace everything. About eight o'clock that night a boy came in breathless haste to me to tell me that all the bees were out of the hive on the alighting board, and some "running like mad up and down the sides of the hive outside." I told the boys who were there weeding their plots that evidently the queen was missing. We removed the roof, and the first thing we saw was the queen on the side of the section-rack by the back of the hive. The boys had carelessly put the metal end of one frame on the next, and the queen had crawled out through the hole thus left. After returning her, in an incredible short space of time every bee was in the hive.

We have taken nearly thirty completed sections of honey from our one stock, and the whole ten frames are covered with bees, with plenty of stores, even in this abominable summer. With the above experiences, can any of your readers imagine a more successful course of instruction in Nature study than we have had with our bees this year? A piece of spare ground near the hive I am hoping to devote to heather. Will you kindly tell me in what month it should be planted? [About May.—EDS.]

Among our garden flowers I might mention that we notice the bees prefer foxgloves, sunflowers, and clarkia. It might be interesting to your readers to know that, although the bees have done so well, no kind of vegetables grown here are, as His Majesty's Inspector put it, "quite normal in growth," owing to the enormous numbers of huge chimney stacks belching out smoke, &c., in the vicinity. A large chemical works further prevents the good and healthy growth of vegetation. How could I have kept the four queens mentioned above alive for any length of time? [By making nuclei.—EDS.]—Headmaster, St. Mark's School, Tipton, Staffs

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"CRAWLING SICKNESS."

[8552] The occasions when one may dare to contradict "D.M.M." or to find fault with his reasoning are so rare that one feels one must make the most of the opportunity when it comes.

Surely there is a weakness at the end of the second paragraph of his article on inspectors? (page 362). He tells us the infected swarm he procured from the South died out. Are we to understand that he permitted it to do so knowing it to be diseased, or that he was ignorant that it was suffering until it had died out? Either supposition seems in his case unthinkable, but whichever might be the case, or even supposing he had destroyed the colony so soon as it was manifestly badly attacked by the disease, it seems unlikely, in view of what seems to be the general experience, that his other colonies would have escaped. For almost everyone who has fallen a victim to this disease seems to agree

that for quite a long time it remains apparently dormant, only a few bees being occasionally found, by a careful observer, to be suffering. Quite a number of determined individuals have destroyed the badly infected stocks immediately, but that does not seem to have prevented the others from being attacked.

To what conclusion does this lead us? Is it not that during the early stages of the disease, when no untoward symptoms seem visible, the infection is already being spread throughout the apiary? If this is so, does it not seem that the destruction of a badly affected colony can then serve no useful purpose?

On the other hand, in all zymotic diseases it is fairly well substantiated that for all practical purposes individuals who have survived an attack are in future immune. It is true that we can hardly regard bees on exactly the same plane as individuals, but there is surely some ground for thinking that the descendants of a colony which has come through the ordeal may resist the disease better in future.

I have, up to the present, been fortunate enough to escape the disease entirely, although outbreaks have occurred north, south, east, and west of me, but if I should be unfortunate enough to be visited I should certainly make an effort to pull the attacked colony through. I should dig up and lime the ground, making a complete clearance of all dead bees.

Every colony in the apiary would be thoroughly cleaned and treated with a remedy, and the remnants, however shadowy, of the "crawling" stock would be carefully nursed either back to life or down to the bitter end. Is not this logic? For it is surely in the dead bees and their surroundings that infection, already having accomplished its deadly work, lurks further. Young bees and brood do not seem to me necessary sacrifices to this evil. If we are unable to find a certain cure or preventive of this trouble—a pessimistic outlook that I should be sorry to subscribe to—our only hope is to raise bees which are immune, and experience in other directions leads us to believe that only those who have passed safely through the fire can with any confidence be regarded as incombustible.

Is it not rather hard on the beautiful Southern Island that it should be for ever saddled with the reproach of giving its name to such an unpleasant thing? How would the term I have used as a heading suit as an alternative?—HERBERT MACE.

BEE STINGS AS A CURE FOR GOUT.

[8553] After reading the paragraphs [8472] on page 277 and [8479] page 254 of "B.B.J." regarding the bee sting cure for sciatica, I decided to try its effect on myself, with the following result.

I may say I had not been free of gout, following on rheumatic fever, for about eight years, and on July 12th last I inserted twenty-two lots of poison on my left arm from the stings of bees, and am delighted to say that it drove away the gout. I hardly know myself now, it is such an unusual experience to be able to use both hands. Thanking you for the many interesting items in the "B.B.J."—W. T. JARMAN, Pitminster.

BEES IN THE ISLE OF WIGHT.

[8554] Having just returned from a pleasant holiday in the Isle of Wight, I thought it might be interesting to some of your readers to know that I saw and examined several very strong stocks there, whose owners informed me they never had had any trace of the disease. The island certainly is an ideal place for bee-keeping, and considering the thousands of visitors there during the season, it ought to be very profitable. There are certainly very few bee-keepers at the present time, and the honey being sold in a shop at Newport came from Somerset.

Perhaps if some of our friends there who have given up on account of bad luck were to try again, good results might accrue. Precautions should be taken to procure bees perfectly healthy and hives thoroughly sweet.—OLIVER C. JONES, Ipswich.

CAMBRIDGE MAMMOTH SHOW SOCIETY.

RESIGNATION OF MR. E. F. DANT.

[8555] It is with very much regret we have to inform you of the resignation of the hon. sec. of the bee and honey section of this Society (Mr. E. F. Dant), which is caused through his removal from Cambridge. We need hardly say we have lost a very good secretary, whose place will be hard to fill, as the amount of energy and work displayed by him to make his department of the show the success it has been was wonderful.—T. H. BROWN and W. DRIVER, *Secretaries*.

[That the tremendous amount of work done ungrudgingly and gratuitously by some secretaries of associations for the benefit of the craft is appreciated, is shown by the above letter sent for publication. Our long acquaintance with Mr. Dant enables us to thoroughly endorse all that is said, and if space permitted we could say much more of his unselfish labours on behalf of the bee-keepers in his district. We wish him the success he deserves in his new venture.—EDS.]

RANDOM JOTTINGS.

By Charles H. Heap.

THE SCOURGE OF THE APIARY.

Mr. Ayles has suggested an amendment of the Bee Diseases Bill which, if adopted by Parliament, would impair the effectiveness of the measure, if, indeed, it did not entirely destroy its usefulness. Seeing that no cure has yet been found for the worst pest with which bee-keepers have to contend, it would be absurd for a local authority to give to a bee-keeper twenty-one days' notice to cure his diseased stock or stocks. Various remedies have been tried, but with myself and others they have failed, in spite of the directions sent out with them having been, in my own case at any rate, carefully followed. We have also the statement of the independent and disinterested investigators of the Board of Agriculture that drugs have been tried without success.

Comprehensive Powers Necessary.—Where the eradication of disease is concerned it is folly to do things by halves. Thoroughness must be the guiding principle. For that reason I am in favour of sufficiently comprehensive powers being given to the authorities and their officers who will be entrusted with the duty of stamping out the diseases which are inimical to successful apiculture and also threaten to inflict loss upon the agriculturist and horticulturist. Under the Diseases of Animals Acts large powers are vested in the Board of Agriculture and scores of local authorities; but who can say that those powers have been abused? I have been brought in contact with many public officials, and I have always been struck with the moderation, good sense, and public spirit which they display in the discharge of their duties. What reason have we to suppose that those who may be appointed to carry out the provisions of the forthcoming Bee Diseases Act will be an exception to the rule?

A Flaw in Mr. Runciman's Bill.—I have met many bee-keepers during the past few years, and the prevailing feeling is that legislative action is needed in order to deal successfully with bee diseases. Some have emphasised the fact that the appointment of practical and competent inspectors will be necessary if the carrying out of the provisions of an Act of Parliament is to be an unqualified success. This leads me to call attention to Clause V., against which I have been expecting to see criticism directed. As I read this clause, it will be possible for the local authority to appoint any person, whether he has seen inside a beehive or not, an inspector under the Act. He may be a medical officer, sanitary officer, police officer, or clerk in one of the authorities' departments, knowing nothing of practical bee-keeping; but he will be able to get over the difficulty his ignorance will present by taking with him "an expert adviser." This, I am sure, is not the intention of Mr. Runciman, and I hope the Bill will be so amended as to make impossible the appointment of inspectors who do not possess a thorough knowledge of apiculture. If any Act of Parliament dealing with bee disease is to work smoothly and effectively, those selected to administer it in detail must have such qualifications as will ensure the confidence and co-operation of bee-keepers.

The Disease Still Spreading.—During the past two months I have seen a great deal of disease. In Berkshire "Isle of Wight" disease continues to spread, and I regret to say that it is beginning to sweep through the Midland Counties. People will not, however, believe that the disease is in their midst until they see the bees dying by hundreds. In a great many stocks the disease is slowly but surely developing, and next spring, if not sooner, their unsuspecting owners will find unmistakable evidence of its ravages. In an apiary of seven stocks which came under my observation a year ago only one stock appeared to be infected. That was dosed regularly with a so-called remedy from August until well into November, but last spring that stock and the other six were found to be suffering from the disease. Two survived and gave a surplus, but both, in spite of the application of another "remedy," will probably not survive the winter, although they have ample stores. It is sad as one goes about to find that apiaries that have been in existence fifty, sixty, and even a hundred years have lost all their hard-working occupants through this fell disease.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Town Bees and Country Bees (p. 322).—Really, D. M. M.! Are you not hard put to it to support Mr. Smallwood's theories? For your casuistry takes but little notice of the fitness of facts! What evidence have you, sir, to offer in proof of the wild assertion that a scrupulously clean Englishman, even though he use scent—the essence of flowers beloved of the bees—is obnoxious to the bees? Even were this the case, it would surely be more easy to find such in town than touring as a bee-expert. So that town bees should be, accordingly, the worst tempered; and your supposition that rest and refreshment are the prerogative of the town, whilst fag and unstrung nerves appear upon visiting the country, is at least open to question. Out upon you, sir! This is not our experience of England, nor of Scotland for

that matter. But perhaps Scotland (N.B. —Banffshire) stands not where it did.

Disease or Disorder (p. 323).—There is no lack of suggestion as to the cause of "Howitis," what with inbreeding, wax-production, frame-hives, and what not. I have heard Mr. Lloyd George blamed for the weather, and suspect that only the editorial pen has preserved his reputation in this other matter. That veteran bee-keeper, Mr. M. H. Tilley, has kindly sent me a copy of the *Dorset Chronicle*, wherein he outlines his theory of "pollen hunger" as the cause of the disorder. Interesting as it is, I am bound to say that at first sight the evidences do not appear to support him. But how account for the improvement said to be effected by the feeding of pea-flour to the disordered bees?

Black v. White (p. 323).—I think that J. R. will find, upon investigation, evidence in support of Mr. Bullamore's statement that white horses are more susceptible than black. A white-nosed horse is said to be more susceptible to plant poisoning. And it is well known that a red-nosed man may drink with impunity what would fell his white-nosed brother. That the bee is entitled to some degree of colour consideration is evident from the simple fact that the learned professors have named one of its diseases *Nosema apis*.

Swarm Scouts (p. 325).—I may assure Mr. Smallwood that bees do, even in this country, often appear to decide upon their new home in advance. I usually have an empty hive ready for a swarm, and this has often, I think, prevented absconding; for, in most seasons, it may be observed to be occupied by numerous scout bees. When this occurs I look around for the source, and when found, treat it. Invariably the scout bees abandon the decoy hive which up to then they were cleaning and defending. Should the swarm issue, it will occasionally enter the hive, but generally will cluster, whilst the scout bees show increased activity. Of course the hive is in some seasons entirely ignored, but in others it earns its keep, for nothing is more trying than to find your best stock suddenly desert supers for parts unknown without notice of its intention. Then it is that one resolves to clip all queens—next year!

To Catch the Queen (p. 332).—The illustration would seem to show how to hold the queen rather than how to catch her. Use is everything in this delicate operation, but the novice would be well advised to practise at a window with a few worker bees, caught in a matchbox and let out for the purpose in a room. If stings are feared, allow a worker to sting a cloth, and when minus its sting practise upon it until confidence is gained. It will be found that the queen usually moves forward as the fingers approach her, so that it is better to aim for the root of the wings with the intention of catching the ends, as shown in the illustration to which I have referred.

Queries and Replies.

[8529] *Stores for Wintering.*—Owing to the bad weather in this district my queens stopped laying about fourteen days since, and I at once fed up with some syrup, but seemingly without any effect. I have two hives, and the queens are both young ones. In the "Bee-keepers' Guide Book" it states that colonies should winter on 30lb. of sealed stores; I take it that this means 30lb. of honey. But my hives have no stores of honey at all. If I give them 30lb. of syrup each, will this be sufficient for them to winter on, or should I give them candy as well? (2) Should the hive entrance be left open six inches all through the winter, and does the wind do any harm when it blows straight in the door?—A. T. B., Gosforth.

Reply.—(1) You should feed with thick syrup until at least eight combs are filled and sealed over. When wintering down it is a good plan to put on a cake of candy. (2) Hive entrances should be left open about four inches. Very little wind can blow in through such a small opening; not sufficient to do any harm.

[8530] *Disinfecting Combs from Diseased Hive.*—I recently had a colony die out with "Isle of Wight" disease, but just previous to their showing signs of it I put on a new rack of shallow-frames. This was on for some time after the disease became acute, but no attempt was made, either before or after, to draw out the foundation. Will this be fit to use next season on a healthy colony if I paint it all over with 10 per cent. Formaldehyde solution? Is there any way of thoroughly disinfecting drawn-out combs after the same trouble?—G. H. B., Dartford.

Reply.—If you paint the foundation and frames with Formaldehyde it will disinfect them. You can also disinfect drawn-out combs by exposing them to Formaldehyde fumes for a considerable period. In the case of "Isle of Wight" disease it is safer to melt them down and burn the frames.

[8531] *Artificial Increase.*—May I again ask for your valuable advice? The hive you were written about last year was so full of bees three weeks ago that I thought I would divide it. I therefore took five frames and put them into two hives (after removing old queens). To each I added a lot of driven bees and their

queen (said to be young). Now I find (three weeks later) that in one hive there is quite a nice show of sealed brood, and brood and eggs, while in the other there is a small patch of sealed brood and a few eggs; which of the following plans would you advise?—(1) Buying a new queen, as I am afraid of not having plenty of young bees for wintering? (2) Uniting to another small stock I have with a good prolific queen? (3) Leaving till later to see if present queen improves? I should also like to know whether one can tell from external appearance whether a queen is fertile or unfertile? I ask this as I seem to think I saw the same eggs a week ago, which ought to have developed in the seven days, although sealed brood seems to contradict this. The bees have been fed during this period, so have not been starved.—W. P., Wanstead.

Reply.—Of the three alternatives we should unite to the small stock having a prolific queen. It is difficult to tell if a queen is fertile or not from outward appearance; even with considerable experience it is really guess work. You need not be afraid to ask questions: we like them, as it enables us to be of direct service to our readers.

[8532] *Preventing loss of Swarms.*—When I was away from home during Whit week one of my hives swarmed. I lost the bees, there being no one who could hive them. (1) Do you think I could prevent this in future by overhauling the hives the week before I go, destroying queen cells, if any, giving bottom ventilation and super room? (2) When clearing supers, should I clear one at a time or can I clear two at once on same hive at the end of season? (3) If bees swarm in May is it possible to obtain surplus from the swarm placed in a new hive and also from those in the old hive, provided the season is good? Thanking you in anticipation.—H. T.

Reply.—(1) Yes. (2) You can clear two supers at the same time. (3) It is possible but does not often occur. We have seen one case this season where it happened.

[8533] *Transferring Bees.*—Will you kindly let me know through your journal the best way to transfer bees from one frame-hive to another, and what time of the day is most suitable?—T. H., Porchester.

Reply.—To transfer the bees, remove the hive they now occupy from its stand, putting the new one in its place; then lift out the frames, with the adhering bees, one by one, and place them in the new hive. The work should be carried out in the middle of a warm day.

[8534] *Wintering Diseased Stocks.*—I started bee-keeping with two hives and no previous knowledge of bees. Both my stocks are affected with foul brood. I followed the instructions given in "Guide Book," burnt all the combs, and washed and disinfected the hives, and ran the bees on to new frames of comb foundation, after confining them for forty-eight hours. (1) Am I too late to feed them with enough stores for winter? (2) Should I also burn the shallow frames, and if not, what should I do with them?—T. S., Glasgow.

Reply.—(1) If you use a rapid-feeder it is possible they may store sufficient food for winter. To make quite certain, put on a 4lb. cake of candy. (2) You had better cut out the combs, melt them down, and burn the frames.

[8535] *Improving Thin Honey.*—I took some honey of good consistency from my hives at the end of July, and, having to leave home a few days later, left it standing in uncapped bottles, covered only with a sheet of newspaper. On my return I found that instead of being thicker, as I had hoped, from evaporation, the honey had absorbed so much moisture from the very humid atmosphere that it had become quite watery. Will you kindly tell me the best way to get rid of the superfluous water without undue loss of flavour?—H. L., New Forest.

Reply.—Stand the jars in a vessel of water and heat till the finger can remain in it for a second or two only. Keep the water at this temperature for twenty minutes, then let all cool together, and take out the jars when cold.

[8536] *A Novice's Queries.*—I should be much obliged if you would give me your advice concerning my bees. I bought a stock at the beginning of April; the bees went up into a section-rack for about a week in the beginning of June, when they swarmed, and left the rack empty. I hived the swarm, and last month the bees clustered on several of the sections in the super. I watch them carefully, and though they appear to be working they have not stored any honey, I suppose through the indifferent weather. I am feeding the parent hive. (1) Should I clear the bees out of the super and begin feeding them, or is it possible that they may still store any surplus? (2) Should naphthaline be put inside the body-box? I placed mine outside, in the space between the outside of the body-box and the outer case.—La Personne Reconnaissante.

Reply.—(1) Remove the super at once and feed. It is impossible for the bees to obtain surplus now. (2) Naphthaline should be placed inside the brood-chamber as far away from the entrance as possible.

[8537] *Driven Bees.*—(1) I have a small stock on seven frames, three containing sealed brood, the others only partly filled with comb, with a little honey. With constant feeding from now would the bees

survive the winter? I have an offer of some driven bees; would you advise uniting with the above so as to strengthen the stock? (2) Is it possible to keep driven bees through the winter without any comb in a straw-skep? (3) Is there a cure for dysentery occurring at this time of year, or would the bees recover with warmer weather?—E. H., Brockley.

Reply.—(1) It is doubtful if the bees would winter in their present condition. You had better obtain driven bees and unite. (2) Certainly not. (3) Dysentery should not be present at this time of year. It is one of the signs of "Isle of Wight" disease; probably this is the cause.

[8538] *Capacity of Extractors.*—Will you kindly answer the following questions through the medium of the "B.B.J."?—(1) Is it necessary for ripe extracted honey to be kept perfectly air-tight to be in good condition? (2) What is the method of fixing the frames in extractors when the cages are made wide enough to extract sections? Thanking you in anticipation.—Amateur, Sussex.

Reply.—(1) Yes. (2) Extractors as made at present will take either six sections, one shallow-comb, or one brood-comb in each of the cages, of which there may be from two to six. The one most used has the former number. When the comb is dropped into the cage there is no need to fix it, as the centrifugal force keeps it in position against the wire backing.

WEATHER REPORT.

Barnwood, Gloucester.

August, 1912.

Rainfall, 6·25in. in 27 days.
Above average, 3·92 in.
Heaviest fall, ·78in. on 26th.
Total to date, 31·43in.
Last year for same period, 9·82in.
Mean maximum temperature, 63·2; 6·8 below average.
Warmest day, 4th, 70.8.
Mean minimum temperature, 49·2; below average, 4·8.
Coldest night, 2nd, 36.
Mean temperature, 56·2; 5·8 below average.
Percentage of cloud at 9 a.m., 71; nine mornings overcast, none cloudless.

Prevailing wind. S.W.

Percentage of wind force, 25.

Barometer, daily mean, 29·74; highest reading, 30·13 on 11th and 31st; lowest, 29·27 on 16th.

Relative humidity, or percentage of moisture in the air at 9 a.m., 82.

Remarks.—The worst August on record in this district; the weather of a type harmful to bees, resulting in queenless hives and increase of foul brood.

F. H. Fowler (F. R. Met. Soc.).

Bee Shows to Come.

Wednesday, September 25th, at Altrincham.—Eleven classes, four specials. Judges: Rev. T. J. Evans, Rock Ferry, and Mr. T. Johnson, Taunton. Prize list now ready. Prizes, £2, £1, 15s., 10s., and 5s. J. Herbert Hall, 1, Market-street, Altrincham, secretary.

October 8 to 11, at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c. Particulars from F. E. Hardcastle, Secretary, 12, Hanover Square, London, W.

Notices to Correspondents.

J. M. (Fishponds).—*Introducing Queen with a Swarm.*—It is a risky method of introduction, but it usually is successful.

E. T. (Sparkwell).—*Treating Disease.*—Use Apicure in the hive, and medicate the syrup with Naphthol Beta. Also requeen the stock, and all will be well.

J. C. (Andover).—*Beeswax.*—The wax appears to be all right, except that it is not clear of honey.

H. K. (Strathpeffer).—*Hiving a Swarm.*—*Unfinished Sections.*—(1) In the circumstances you mention, it is difficult to say exactly what happened. We are inclined to think that the first queen was killed in hiving; the second was accepted, and this is the one laying, the Carniolan being also killed. (2) Dead bodies of queens are often carried some distance away. (3) If not filled at the heather the honey in the sections should be extracted, and the latter stored away for use next season. (4) No doubt you could obtain an expert by advertising in our pages.

T. O. J. (Kent).—*Honey from Diseased Hive.*—(1) The honey is quite fit for human consumption, but extreme care should be taken that none of it is obtained by robber bees. (2) The frames are not worth saving; burn them. You can disinfect the hive by scorching it with a painter's blow-lamp.

Glentonian (Peterborough).—*Feeding up for Winter.*—You should not use Demerara sugar for bee food; white refined cane-sugar is best. You should continue feeding until the bees have 30lb. of stores, or, to put it plainly, eight combs well stored with food. Candy should be put on when packing down for winter. We should advise your purchasing a copy of Cowan's "British Bee-keepers' Guide Book," and studying it during the winter months.

E. N. (Eltham).—*Wintering Small Lot of Bees.*—We do not think you will be able to successfully winter such a small quantity of bees. It would be best to buy some driven bees to unite to them. Should you do this you must add more

combs and feed with rather thick, warm syrup.

W. T. (Umberleigh).—*Cane or Beet Sugar.*—The tradesman's refusal to guarantee its being cane sugar gives you the answer.

Novice (North Wales).—*Unsealed Honey in Supers.*—Take the super off and extract the honey. It can be ripened by exposing in a honey-ripener in a warm room, or by heating it in water.

A. D. L. (Luib).—*Bees near a Lake.*—Water in the vicinity of an apiary often causes loss of bee life in early spring, the cold winds chilling the bees and causing them to drop into the water. In summer time there will be little loss, excepting on very windy days.

O. C. T. S.—*Sugar for Bee Food.*—We should not care to use the sugar you describe. You will find it cheaper in the end to buy guaranteed cane sugar.

T. J. N. (Upway).—*Parasites on Queen.*—The red insects are *braula cœca* or blind louse. They irritate the bees, and should be got rid of. Smoke with tobacco smoke and they will drop off and can be brushed away. See "Guide Book" (page 169).

Honey Samples.

J. K. G. (Montrose).—Honey is of inferior quality. It is tainted with ragwort.

H. T. (Worsley).—Sample is a light-coloured honey, good in all respects except density, which is only fair. The source is clover, and the honey is worth about 9d. per 1lb. retail, and 50s. per cwt. in bulk.

Boots (Bishopstoke).—No. 1 is light in colour, density fair, flavour fair, aroma good, worth about 10d. per 1lb. No. 2 is a medium coloured honey, density poor, but of good flavour and aroma. It should sell at 7d. per 1lb.

E. T. (Bootle).—The honey is medium in colour, of good density, but an admixture of ragwort spoils the flavour.

Kingswood (Herne Hill).—All four samples are identical in density, which is fairly good. Nos. 2 and 3 are slightly darker than Nos. 1 and 4. All are light samples, and of good quality. They have been gathered mainly from clover, and are worth 10d. per 1lb. retail.

Suspected Disease.

H. B. (Ladywood), W. R. B. (Purley), Mrs. A. (Lingfield).—The bees are affected with "Isle of Wight" disease.

T. H. (Birmingham).—We cannot trace any disease in bees sent.

Pie (Hampstead).—The saturated state of the bees prevents us diagnosing the trouble. Send some live ones, and we will report.

A. W. E. (Stroud).—It is impossible for us to say if there is disease in the few cells you send. We require a piece of comb about 3in. square, packed in a tin box.

E. O. F. (East Dulwich).—No. 2 show signs of "Isle of Wight" disease. Nos. 1 and 3 appear to be healthy.

J. C. (Godmanchester).—A bad case of foul brood. If there are only a few bees you had better destroy them.

E. S. B. (Wallington).—There is no disease in comb sent. From your description we should say the colony has been robbed out.

H. R. (Stanford).—We can say very little about the bees, as they are too dry for examination. From their general appearance we should say they have died from old age.

H. J. P. (Colchester).—Your letter arrived in a filthy mess through packing it with the comb. It should have been sent separately. Your previous sample arrived with no letter or name, therefore we could not reply. It is chilled brood, and is not unusual considering the cold weather we have had.

Y. W. (Oxford).—The bees were too decomposed for examination.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

6 W.B.C. HIVES, perfectly clean, as new, covered roofs, 10s. 6d. each. — KITSON, Stansted, Essex. v 60

3 DOZEN well filled Sections, glazed, 9s. dozen; 100 1lb. bottles, 8s. 6d. dozen; sample, 2d.—CUTFORTH, hairdresser, Oakham, Rutland. v 61

A COWAN reversible geared Extractor, nearly new, little used, too large for my apiary; will exchange for 20s., and balance in honey, cost 50s.—JELLINGS, 8, Stoke Green, Coventry. v 42

2 SPLENDID STOCKS, 4-frame Nuclei, in good hives, part stored, 1912 queens, £3 3s.; also appliances.—MILES, 174, Mere-road, Leicester. v 41

3 GOOD healthy Skeps of Bees, young queens, good condition, 15s. each, or 40s. for the three; sent well packed.—MEPHAM, Orlestone, Ham Street, Kent. v 43

COMPLETE APIARY and accessories for sale, whole or part; inspection invited; what offers? —Apply, LOVE-COX, Sutton, Ely. v 44

FINEST CLOVER HONEY, 58s. cwt.; sample, 3d.—BUTTON, Manse Cottage, Haverhill, Suffolk. m 89

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, September 19th, 1912. Mr. W. F. Reid presided, and there were also present Miss M. L. Gayton, Sir Ernest Spencer, Colonel H. J. O. Walker, Messrs. T. Bevan, J. N. Smallwood, A. G. Pugh, E. Watson, J. B. Lamb, E. Walker, O. R. Frankenstein, A. Richards, Association Delegates G. R. Alder (Essex), G. J. Flashman (Barnet), G. W. Judge (Crayford), and the Secretary, W. Herrod.

The minutes of the previous meeting, held on July 4th, were read and confirmed.

Letters expressing regret at inability to attend were read from Messrs. T. W. Cowan, C. L. M. Eales, R. H. Attenborough, and Captain Sitwell.

The following new members were elected:—Messrs. N. Rigby and Dr. J. Soane (life members), Miss I. H. Jackson, Mrs. C. F. Chester, Mr. H. Wright, Mr. E. Booker, Jawahir Lal Sinha, Mr. P. E. Spielmann, Mr. A. F. Hardy, Rev. C. L. L. Gwilliam, Mr. A. E. Humphreys Owen, Mr. E. Scott, Mr. F. J. King, Mr. T. W. Swabey, Mr. J. S. Robinson, Mr. H. W. Daltry, Mr. W. J. Ayles, Mr. H. Watts, and Mr. C. Elwell.

The following names of delegates to the Council meetings were submitted and accepted:—Mr. Tickner Edwards (Sussex) and Mr. R. Giles (Derbyshire).

The report of the Finance Committee was presented by Mr. Smallwood, who stated that the finances of the Association had never been in a healthier condition. The payments into the bank for August amounted to £101 13s. 3d., a sum which had never been reached before in one single month. The balance at the bank at the end of August was £276 18s. 7d. Payments amounting to £105 18s. 6d. were recommended.

The report on the First Class Examination paper work held in May last was presented, and it was resolved that the following take the lecture test. Messrs. W. O. Jones, D. Davis, G. Mason, W. J. Cornall, F. Kenward, A. Richards, J. Smallwood, and Captain Sitwell.

Reports on Third Class Examinations, held at Doncaster, Devon, Melton Constable, Hinckley, Hereford, Worcester, Cumberland, Swanley, Northampton, Ipswich, Mouldsworth, Henwick, Somerset, Cardiff, Bradford-on-Avon, Alford, Newcastle-under-Lyme, and London, were presented, and it was resolved to grant certificates to Misses N. Rigby, McHardy, E. Gardiner, M. B. Bruce, I. Burkitt, D. Crooks, K. Dane, A. H. Edwards, B. Elfoersen, M. E. Esdaile, F. M. Friend, P. Fry, G. Gilbert, M. Gill, E. Gladding, H. Guise, K. M. Harper, F. M. Harty, R. Jackson, S. Knight, M. Merryweather, E. Nightingale, D. Taylor, P. Tuson, G. Wilson, D. Wilson, L. Whitmore, G. Woodward, V. D. M. Durrant, M. Allwork, N. Hutchinson, K. Priestman, K. Caddell, J. Bury, and N. Caddell, Rev. W. E. Mattinson, Dr. D. Wardleworth, Messrs. E. D. Lowes, T. Hood, F. A. Wooley, H. F. Hogley, R. Lee, W. E. Richardson, G. G. Desmond, H. Fisher, H. W. Woolsey, W. H. Wood, A. Meadows, J. Hunt, W. Bawm, E. Wheatley, W. N. Helme, J. Turbill, H. C. Meadham, T. Meadham, H. E. S. Viner, C. Rutherford, T. W. R. Skelly, W. E. Hipworth, T. Payne, J. S. Stopford Taylor, J. Hutchieson, B. A. Gage, E. G. Harvey, E. A. Westcott, J. Coombes, W. J. Wiltshire, A. G. Lovatt, R. Brinkworth, W. Moore, E. A. Seamark, G. E. Muspratt, F. E. Newman, F. D. Raymond, W. B. Stanton, F. J. H. Watkins, J. Batley, G. Wooldridge, J. L. Davey, J. Frost, F. D. Blades, J. Johnson, E. B. Blaker, H. Watts, Jawahir Lal Sinha, F. W. Harper, A. F. Harwood, B. E. Buckwell, H. Cressy, and B. Blackbourne.

It was resolved that the questions for Third Class Examinations and arrangement of paper be revised, and that Colonel Walker be asked to kindly make suggestions to be submitted and discussed at a future meeting.

A vote of thanks was passed to those gentlemen who had kindly undertaken the work of examining candidates for Third Class Certificates.

Arrangements were made for a conversazione on October 10th (Dairy Show week), in the Lecture Hall of the Zoological Society, Regent's Park. Miss Sillar, late of South Africa, will read a paper on "Bee-keeping in South Africa," and a special lecture, under the Development Fund Scheme, on "The Fertilization of Flowers by Bees," illustrated by lantern slides, will be given by R. J. Tabor, Esq., B.Sc., Royal College of Science, South Kensington. Tea to be provided for members and friends at 5 p.m. The conversazione will commence at 6 p.m.

The report of the Development Fund Committee was read and accepted.

Correspondence was read from the Board of Agriculture with regard to an International Congress on Agriculture, to be held at Ghent in June, 1913. It was resolved to nominate Mr. W. F. Reid as a delegate from the British Bee-keepers' Association.

The report of the W. B. Carr Memorial Fund Committee, recommending that it take the form of a gold medal, was received and adopted. It was further

resolved that for the extra cost of purchase of dies the fund be reopened in the BRITISH BEE JOURNAL.

The dates for Second Class examinations were fixed for November 29th and 30th.

THE GROCERY AND ALLIED TRADES' EXHIBITION.

The Twentieth International Exhibition of the Grocery and Allied Trades at the Agricultural Hall was opened on September 21st, and will continue until Saturday, 28th inst.

Although the season has been far from good the exhibits in the honey section are of excellent quality. Numerically also they are nearly up to last year's standard, which was a record one, the number in 1911 being 277, while this year 244 are staged. There is no doubt that if bee-keepers were not so remiss in sending their entries in good time last year's total would have been passed, as a large number of entry fees had to be returned, having been sent too late.

The Exhibition is well worth a visit for the honey alone, the classes for granulated and for heather honey being exceptionally good, owing, no doubt, to the splendid season of 1911. A very beautiful trophy is staged by a new exhibitor, Mr. A. G. Wiggins, who was deservedly awarded premier honours among the seven staged. The class for commercial wax is poorly represented.

Messrs. Jas. Lee and Son, E. H. Taylor, and Mrs. Seadon have each a very good display of appliances in bays in the gallery.

Mr. E. Walker and Mr. J. Smallwood judged the exhibits, and made the following awards :—

Outfit for a Beginner in Bee-keeping (four entries).—1st, Jas. Lee and Son, Highbury, N.; 2nd, E. H. Taylor, Welwyn; 3rd, Mrs. E. Seadon, Bromley.

Honey Trophy (seven entries).—1st, and B.B.K.A. silver medal, A. G. Wiggins, Wembley; 2nd, Jas. Lee and Son; 3rd, J. Pearman, Derby; 4th, Mrs. E. Seadon; v.h.c., C. P. Maynard, Guildford.

Twelve 1-lb. Sections (twenty-two entries).—1st, and B.B.K.A. bronze medal, Brown and Son, Somersham, Hunts; 2nd, T. G. Hillier, Andover; 3rd, Jas. Lee and Son; 4th, J. Pearman; 5th, T. Marshall, Sutton-on-Trent; v.h.c., A. Humphrey, Sittingbourne; h.c., F. W. Tytler, Bishops Nympton, South Molton.

Twelve Heather Sections (eight entries).—1st, A. Young, Chatham; 2nd, W. Dixon, Kirkgate, Leeds; 3rd, J. Herrod, Sutton-on-Trent; v.h.c., J. M. Balmbra, Alnwick, and Miss Unson, Churt, Farnham; h.c., M. J. Lamboll, Chiddingfold.

Three Shallow Frames (eight entries).—1st, Jas. Lee and Son; 2nd, C. H. Rose, New Malden, Surrey; 3rd, Brown and Son; v.h.c., A. Watkin, New Malden, Surrey.

Twelve Jars Light Extracted Honey (fifty-six entries).—1st, and B.B.K.A certificate, T. Marshall; 2nd, J. Pearman; 3rd, R. Allen, Bicester, Oxon; 4th, T. G. Hillier; 5th, J. Boyes, Cardiff; v.h.c., H. G. Ceiley, Muswell Hill, N.; J. Herrod; H. J. Moore, Radstock, Somerset; K. W. Lloyd, Thetford, Norfolk; A. Bowen, Cheltenham; J. Jones, Leigh, Lancs.; h.c., E. G. Tremlett, Harrow; J. Dalby, Brackley, Northants; R. Morgan, Cowbridge, Glam.; J. North, Sutton-in-Ashfield; J. Birkett, Blundell Hill, Rainhill; E. Watson, Holywell Hill, St. Albans.

Twelve Jars Medium Extracted Honey (thirty-three entries).—1st, R. Brown and Son; 2nd, T. Marshall; 3rd, Mrs. F. Harris, Boston, Lincs.; 4th, J. Berry, Llanrwst, N. Wales; v.h.c., Lee and Son; W. G. Martin, Green Street Green, Orpington; W. Freeman, Coventry; W. Shukes, Middleton Scriven, Bridgnorth; W. H. Allard, Stockton, Rugby; S. Sanderson, West Wratting, Cambs.; W. A. Carver, Castle Cary, Somerset; h.c., J. Southwell, Lockerley Green, Romsey; Mrs. Seadon; J. M. Best, St. Austell, Cornwall; C. H. Rose; F. W. Frusher, Swiss Apiary, Crowland.

Twelve Jars Dark Honey (fourteen entries).—1st, A. P. White, Alfriston, Berwick Station, Sussex; 2nd, T. Marshall; 3rd, S. E. Baumbrough, Linslade; v.h.c., H. J. Moore and W. B. Allister; h.c., R. Morgan, W. G. Martin, and Mrs. Seadon.

Twelve Jars Heather Honey (ten entries).—1st, J. Herrod; 2nd, J. Pearman; 3rd, A. Young; v.h.c., T. Sleight, Old Danesmoor, Derby; J. Berry, and W. Dixon.

Twelve Jars Heather Blend Honey (twelve entries).—1st, A. Young; 2nd, G. H. and T. S. Elliott, Southwell, Notts; 3rd, G. Hunt, Newark, Notts; 4th, W. Dixon; v.h.c., J. Pearman, J. Berry, and M. J. Lamboll.

Twelve Jars Granulated Honey (twenty-four entries).—1st, J. Herrod; 2nd, F. W. Frusher; 3rd, R. Allen; 4th, R. Brown and Son; h.c., A. H. Smith, Louth, Lincs.

Beeswax (commercial) (six entries).—1st, J. Pearman; 2nd, Mrs. F. Harris; 3rd, J. Berry; 4th, F. W. Frusher; v.h.c., W. Dixon.

Beeswax (Three 1-lb. cakes) (twenty-two entries).—1st, J. Herrod; 2nd, J. Pearman; 3rd, T. Sleight; 4th, W. S. Halford, West Wratting Lodge, Cambs.; v.h.c., T. G. Hillier.

HONEY SELLING CLASSES.

Extracted Honey in Bulk.—Certificates, R. Allen; W. Tovey, Lechlade, Glos.; W.

Tovey; A. H. Bowen, Cheltenham; A. Dunn-Gardner, Fordham Abbey, Fordham, Cambs.; J. C. Roberts, Maidstone.

Extracted Honey in Jars.—Certificates, G. F. Gibbons, Neston, Corsham, Wilts; J. Rowlands, Pwllheli, N. Wales; Mrs. Williams, Pwllheli, N. Wales; A. H. Bowen; A. P. White; W. B. Allister, Throckenholt, Wisbech; S. Sanderson; J. C. Roberts.

NORTHANTS. B.K.A.

ANNUAL SHOW IN ABINGTON PARK.

The thirtieth annual show of the Northants Bee-keepers' Association was held in Abington Park on August 22nd, by kind permission of the Corporation. Owing to the unfavourable season the entry was not so large as last year, which was a record for the show. No fewer than 160 entries were received, however, and the quality of the exhibits was excellent.

The honey was this year set out in two tents, which added greatly to the attractiveness of the display and was more comfortable for the visitors. The exhibits were judged by Mr. W. Herrod, F.E.S., expert and secretary to the British Bee-keepers' Association, and he also gave lectures and demonstrations in the bee tent during the afternoon. In the evening the members of the Association sat down to tea at the Abbey; this being followed by a lecture from Mr. Herrod on some advanced bee-keeping subject.

The arrangements for the show were carried out in admirable fashion by Mr. R. Hefford, secretary to the Northants Association, assisted by Mr. W. T. Munn, Northampton; Mr. T. Norman, Northampton; and Mr. G. W. Mason, Yardley Gobion.

MEMBERS' CLASSES.

Twelve 1-lb. Sections.—(British Bee-keepers' Association silver medal), F. Holley, Wellingborough; 2nd, James Adams, West Haddon; 3rd, Geo. Page, Holcot.

Twelve Jars Extracted Light Honey.—1st, E. Thompson, Kettering; 2nd, F. Ward, Thrapston; (British Bee-keepers' Association bronze medal) Chas. Wells, Oxendon; 4th, G. Clifton, Long Buckby; certificate, R. Allen, Tusmore Park.

Twelve Jars Extracted Dark Honey.—1st, E. Marshman, Little Linford, Wolverton; 2nd, W. Snow, Yardley Hastings; 3rd, C. Cox, Brampton.

Twelve Jars Granulated Honey of any year.—1st, James Adams; 2nd, C. Cox; 3rd, C. Wells.

Two Shallow Frames.—1st, H. Collins, Moulton; 2nd, C. C. J. Barnett, Langham-place; 3rd, C. C. Burnett, Wellingborough Road; certificate, James Adams.

Super of Honey.—1st, R. B. Manley, Potcote House, Towcester; 2nd, Geo. Hickman, Kingsley Park.

Beeswax.—1st, A. Hiscock, Loddington; 2nd, C. Wells; 3rd, J. Adams; 4th, E. Billson, Cranford.

(Open to those who have never before taken a first prize for honey.)

Six Sections.—1st, G. Clifton; 2nd, H. Harris, Wellingborough Road; certificate, Miss Edith A. Scott, Tichmarsh.

Six Jars Extracted Light Honey.—1st, E. Marshman; 2nd, W. Smart, Northampton Water Works; certificate, J. H. Willmott, Stanwick.

Six Jars Extracted Dark Honey.—1st, E. Marshman; 2nd, W. Snow.

Super of Comb Honey.—1st, G. Hickman.

OPEN CLASSES.

Single 1-lb. Jar.—1st, R. Allen; 2nd, H. C. Barron, Newcastle, Staffs.; 3rd, H. Ward, Leamington; 4th, A. T. Church, Cardiff; 5th, C. W. James, Hardwick, Bicester.

Single 1-lb. Jar.—1st, H. Ward; 2nd, R. Allen; 3rd, A. Hiscock; certificate, C. J. Burnett.

Honey Cake.—1st, Miss E. M. Burnett, Langham Place; 2nd, Mrs. Cox, Brampton; 3rd, Mrs. R. Hefford, Kingsthorpe.—*Communicated.*

W. BROUGHTON CARR MEMORIAL FUND.

The Council of the B.B.K.A. have now decided that the memorial to the late Mr. W. Broughton Carr shall take the form of a gold medal, to be awarded as a prize. As many expressed a wish to know how the money was to be spent before subscribing, and as extra expense will be involved in procuring dies for striking the medal, the Council have decided to reopen the fund, so that those wishing to subscribe for this worthy object may do so. Subscriptions should be sent to the Secretary, British Bee-keepers' Association, 23, Bedford Street, Strand, London, W.C. An acknowledgment of donations received will appear in THE BRITISH BEE JOURNAL in due course.

LECTURES ON BEE-KEEPING.

With the co-operation of the Barnet and District B.K.A., the County Council for Herts arranged a lecture by Mr. W. Herrod, which was given in the Adult Schoolroom, East Barnet, on "Bee-keeping for Profit." A large audience assembled, the members coming from all parts of this very scattered neighbourhood. That the lecture given was of very great interest is proved by the fact that inquiries respecting the continuance of the subject have been made by many of those present.

Mr. Ellis Hill presided and introduced the lecturer in a particularly happy speech, remarking that he did not know how to express the thanks he felt were due to the man who was able to show how to make a hobby both interesting and profitable. The meeting terminated with votes of thanks to the Chairman and lecturer.

Another highly successful lecture was given in the village club-room, Totteridge, on September 9th, under the same auspices, when the lecturer, Mr. W. Herrod, addressed a very appreciative audience on "Bee-keeping for Profit." Great interest was shown, and many questions asked. Major O. Boulton presided.—G. J. FLASHMAN, Hon. Sec.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

Many readers will envy Mr. Sloan, whose apiary we illustrate this week, on reading how he was able to stock it at so little expense. To start without buying any bees, with no outlay excepting time in hiving them and for material with which to make the hives, is one way of becoming a bee-keeper which others would like to follow. Mr. Sloan's good fortune is due to his adaptability and to his courage in attempting difficult tasks without previous experience, and he fully deserves the success he has achieved. He describes his experiences in the following notes, written at our request, to accompany the picture:—

As far as I can recollect, my first experience of bees was when I was a boy, taking a section of honey from one of my father's hives when he was out of the way, and using a piece of an old sack, which I kept smouldering, for use as a smoker.

Although we always had a hive or two at home, I never took any interest in bees until I came to the South of England. One day, while talking to a friend, he asked me if I kept bees. I replied, "No, and I don't want to, either." After seeing his bees, however, I became so interested that I took the measurements of one of his hives, and came home and started making my first hive, on the W.B.C. principle.

Bee-keepers, I find, are very amiable as a class, and when talking to one, after I had started making my hive, he asked me if I would come and cut the queen-cells out of his hives, and promised me a swarm for my trouble. Although I had never seen a queen-cell then, I agreed to his proposal. I found out all about queen-cells, went through his stocks, and came home very proud of my first swarm of bees. That was on May 31st, 1911. A few days later I found a swarm on a branch of a tree in a wood, and another swarm went into a room at the Rectory here, and as two other bee-keepers would not remove the bees I was asked if I would do so, and I took the swarm very easily. It was hanging from the ceiling. I held a box under the cluster, pushed a board close along the ceiling, and the bees were in the box in a second; after waiting two hours for stragglers to settle, I brought them home. These three swarms did remarkably well that year, my profit being just over £5, and I do not expect I shall have made much more in 1912 from double the number of hives.

In the autumn of 1911 a neighbouring bee-keeper, who had some skeps to take up, promised, if I drove them, to give me the bees. As it was my first attempt at driving, and I had never seen it done, I was badly stung, but in the end I got the bees home all right, took two frames out of each of my three stocks, which left them with eight each, and wintered the driven bees on the six frames.

That autumn I fed 8lb. of syrup amongst the four stocks, and they wintered very well. I also covered them with plenty of quilts, and packed straw chaff between the brood chamber and the outer covering, but I find chaff gets damp and musty, so I am going to try pine sawdust this winter and note results.

About the middle of March this year I noticed that there were a lot of dead and dying bees lying around my first stock, so I began to think something was wrong, and as the excreta were of a yellowish colour, I presumed it was dysentery, but after talking to a bee-keeper, who had lost all his bees with "Isle of Wight" disease, I made another examination, and was perfectly sure my bees had the disease. I immediately sent off and got some of Ayles' "Isle of Wight" Cure, disinfected a new hive, and changed them over into it. In a week or ten days' time they did not seem so bad, and there were fewer crawling about; by this time I had moved my other three stocks to the other side of the garden, and also changed them into new disinfected hives; I also buried the dead bees which were lying about every night.

Two of the moved and disinfected hives contracted the disease, and I changed them again, and now they are fairly strong and breeding well. The driven bees, which I wintered on the six frames, never showed the least symptoms, so I only changed them once; they are, at the present, my best stock.

I noticed that where I had platforms for heavy-laden bees to crawl up to the entrance, diseased bees, which could not fly, also used them, so I removed the platforms, and although it may not do any good, I do not like to see diseased bees crawl into the hive again. I am pleased to say I have not lost one stock with "Isle of Wight" disease yet, but, as it is

within a mile of me in four different places, I fear it will be difficult for me to keep it at bay, even supposing my stocks to be absolutely cured.

Bees seem to have had what one would call swarming fever this year. On the 10th of May I bought as good a swarm as I could desire for 4s.; the bees did well in the sections, but, to my surprise, they swarmed on a little yew bush early in July. I took off the sections and went through the frames, cut out ten queen-cells, and as the queen with the swarm was in her prime I returned them to the old hive. When they came out again next day I could not understand what was wrong, but you can imagine my feelings when I saw I had missed a ripe queen-cell. I did not take any more risks, but killed the old queen, drove the bees back, and in a few days a young queen had hatched out.

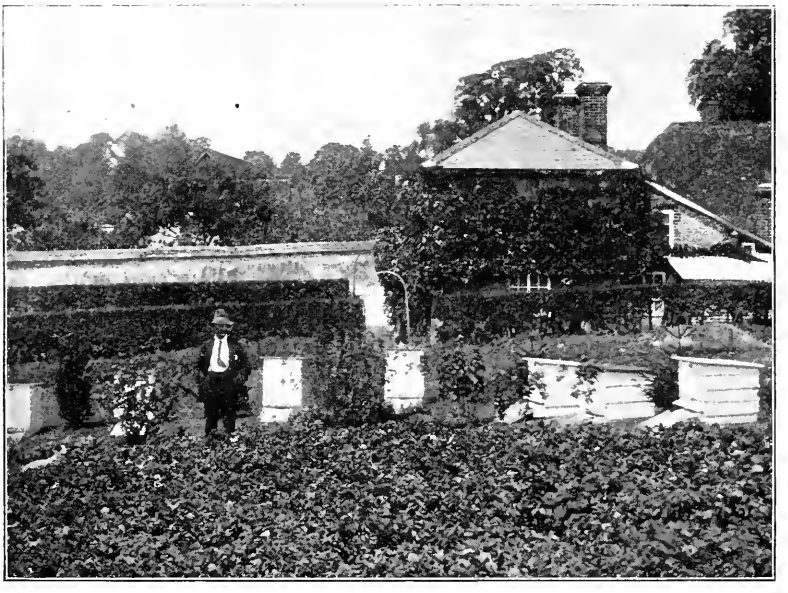
That same night I cut sixteen queen-cells out of two of my other stocks, so I thought that would finish swarms for the season, but on coming home one day about 12 o'clock, to my surprise there was a beautiful swarm in my straw skep, which a passing bee-keeper had kindly hived for my wife in my absence. I did not know which hive it came out of, but after flouring some of the bees and carrying them to a distance, I soon found that they had come out of a swarm which I found on the 25th May lying on the grass in a field. As the queen was a good one, I intended to rear queens from her next year, so I cut out all the queen-cells and returned the bees.

Whether she was lost, or the bees killed her, I do not know, but just as I came home on the 27th July they were swarming, and clustered on a little fir-tree close at hand. I took the skep and watched for the queen to go up; on seeing her, I could see that she was not the old one, as I knew her by a defective wing she had, which accounts for her alighting on the grass in the first instance, as it was impossible for her to fly any distance.

After hiving the swarm I went through the stock, and found three ripe queen-cells and three cells just hatched out. I also found two queens on the frames, killed them, cut out two of the cells, killed the queen with the swarm, and drove the bees back again; I hope this finishes the swarming fever with me.

A neighbouring bee-keeper told me he had nine stocks, and they threw off fourteen swarms, and he has not seen a sign of disease yet.

Bees in this district have not done so well this year as last. There was a field of broad red clover within three hundred yards of my garden last season, and one could see the bees fly direct to it, and on walking through the field it seemed to be alive with them, but two days after it was cut they flew off in exactly the opposite direction to where there was a field of charlock. We have had abundance of white clover this summer.



MR. A. SLOAN'S APIARY, LILAC COTTAGE, CHOLDERTON, SALISBURY.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

HOW FAR CAN SWARMS TRAVEL?

[8556] The article by "D. V., Dunaskin" (8546, page 365) respecting the location of a runaway swarm, aroused my interest in the question, "How far Swarms Travel." Here we have an opinion that the swarm in question must have travelled over ten miles, although it previously settled on a tree, in an apiary, one mile distant from its final abode.

Was this a coincidence in that this apiary was in the line of flight, or did the swarm actually issue from that apiary? If not, can it be supposed that this swarm travelled in a straight line for nine miles, or that there were other stopping places en route? No doubt scouts were sent out from the apiary of a mile distant from the loch, and their present home (almost made to take the standard frame) would not readily be found; therefore, the swarm must have remained a considerable time on the tree, and naturally one would think the bee-keeper would have hived it. At all events, he could have dusted a small quantity of bees with flour, and proved beyond doubt whether they issued from any of his hives.

I have followed many swarms, and the directness with which they fly to the place of their choice has always been remarkable to me, and in every case foresight has been shown. The furthest point I have known a swarm to travel has not exceeded three miles. Will any bee-keeper state, through your columns, the greatest distance one has been known to go? According to "D. V." there would seem to be no limit, and yet very few persons see swarms on the wing. If swarms travel great distances beyond their foraging zone more people would see them, and surely they would be recorded ere now! If a stock or swarm be moved a distance of two miles, and even made queenless, I find that very few bees indeed come back to the old stand, although they have not been moved out of their flying zone.

Has a swarm been known to cross three miles of water, or over a town the same distance? I doubt if there is sufficient evidence to prove they go beyond their foraging ground, for I presume the scout bees visit the future home prior to the colony entering, and there would apparently be no need to travel any great distance for this in the case of the town.

If they do, then here is presented a difficulty in keeping a strain of bees pure, and that also may be taken into account as another cause of the spread of disease —T. W. Swabey, Lincoln.

FINDING A MARKET FOR HONEY.

[8557] Having been a reader of your journal for some time, and seeing by advertisements the prices English bee-keepers are asking for their honey in sections, viz., 8s. 6d. and 10s. per doz. I have often wondered are they able to obtain such prices, and knowing you are a star of the first magnitude in this respect, I thought you were the best person to apply to for the information. I supply most of the bee-keepers in this district with appliances, but up the present there has been no outlet for the honey when secured, and I have written wherever I thought there was a chance of getting an order, without success. Then I applied to the Department of Agriculture, and sent their representative samples to London, Liverpool, and Edinburgh. He also failed to procure me an order; but during the last two months, through the advertisements in your journal, I have got orders for five gross of sections, some at 7s., carriage paid and packages free, some at 7s. 9d., carriage paid, and an order for one gross at 8s., which was the highest I could obtain. I took up bee-keeping as a hobby myself, and for some years kept bees under the guidance of a technical instructor, who has developed the industry to a high standard in this district. In the interest of bee-keepers I would like to know: is it possible to get the prices referred to, and at the same time get a market for, say, six to eight thousand sections annually? I shall be pleased to send you a sample section similar to those I have supplied.—Irishman.

[We are pleased to note that our paper has enabled you to get orders, though your Government department failed to do so. Try an advertisement of your own in the "B.B.J." and no doubt you will secure orders. Sections are very scarce this season, and sell readily unglazed at 8s. to 9s. 6d. per doz., according to quality. English bee-keepers mostly sell their sections glazed, at 9s. 6d. to 11s. per doz., and pay carriage on orders over 40s. in value. We shall be pleased to see a sample of the honey you are offering, and may be able to help you further.—Eds.]

BEES IN THE ISLE OF WIGHT.

[8558] With reference to Mr. Jones's letter in the "B.B.J." of September 19

(page 375), I am pleased to find that there are still some bees in the Isle of Wight which have escaped this dreadful plague. Mr. Jones does not say if the bee-keepers referred to had kept their stocks free from infection since it first appeared in 1904. Being one who has suffered many losses and taken a great interest in the disease, I shall be obliged if Mr. Jones, either through the "B.B.J." or privately, will give me the names and addresses of those bee-keepers he mentions.—THOMAS PARKER, Ryde, Isle of Wight.

RAVAGES OF "ISLE OF WIGHT" DISEASE.

[8559] We felt very confident up to May last that our apiary was clear of "Isle of Wight" disease, but soon found out our mistake. When making an inspection of our village bees and neighbourhood, we found every stock with the disease; we never had such a robbing fever in all our experience, and could not stop it. We had all our stocks treated with Ayles' Cure, thinking it might help as a preventive, and treated them also with another remedy, but it was all labour in vain and lost cash; it had no effect. So we have taken the only real cure: we have killed off every stock. We have lost 180 stocks in two years, and all our neighbours have lost their bees also. We expect to get the neighbourhood cleared out in a few weeks, so that bee-keeping can commence next year. We have a nucleus apiary of sixteen stocks started eleven miles distant, with healthy Scotch driven bees, and they are doing well. Up to the present our opinion is that the trouble will never be cured until the last stock in the district is killed off.—ANDREW MUIR AND SON, Kirkcowan.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Angry Bees.—"The bees which gave the best results have fiendish tempers, and my experience for a period of about ten years has been that the bees with bad tempers have done best," so writes a contributor to the *South African Bee Journal*. I have read the same statement repeatedly before, but my experience does not agree with the finding. "Fiendish" bees for several reasons cannot excel the quiet and staid in securing heavy surplus.

Forty Years Ago.—The Editor of *Gleanings* calls for a "show of hands from those who were subscribers forty years ago, in order that a list may be published." This list will be interesting, yet, I should think, very short. At that time the Medina works had no power but "that derived from a windmill." Comparing this with the splendid "power" now employed, shows the immense growth of apiculture in a very vivid manner. Our "B.B.J." current volume, too, is XL. A show of hands from those who have subscribed right through would be well worth having.

One for Painting Hives.—Mr. Chadwick writes: "Paint your hives. A good coat of paint occasionally will make a hive last for years. Without it the hive is soon sun-checked, season-cracked, warped, and fit only for kindlingwood."

To Stop Robbing.—"Two four-frame nuclei were attacked, the robbers being in droves. I threw a handful of wet grass in front of the entrance, which I contracted. Then I took a paint-brush and a can of coal oil and spread the oil the width of the brush all round the hive. Robbers smelt the oil in front of the hive and round the sides. In three hours robbing had stopped." The plan, if efficient, is easily applied.

In Favour of Quilts.—"Our modes of handling bees, now that *we all* use a quilt out here (California), thus avoiding the snap in removing a sealed cover, enables us to use very much less smoke than in early days." This one feature alone would tell heavily in favour of quilts. Smoke first and then a jar is all right. A jar first and then smoking makes the "fiendish" bees referred to above.

The Honey Crop.—Summarising four pages of "brief reports," each only two or three lines of small type, the Editor of *Gleanings* says: "The indications so far point to the largest crop of clover honey in recent years, at least we do not remember the time in a decade when there were so many favourable reports." He predicts, however, owing to excessive winter losses, that there is little fear of a fall in prices, although some buyers are trying to "corral the crop," which means an attempt to form a "honey ring." Here we have had a very poor clover season, and all indications point to a *total failure* in heather districts, owing to prolonged and excessive rainfalls, accompanied by a very low temperature.

Mr. A. I. Root records that about forty years ago he had such a bountiful flow from basswood that he had to pump the cistern dry to store the yield, which enabled him to buy land whereon he planted 4,000 bass wood trees. He adds, "We have waited patiently for over forty years for such another flow to come, and now we have it. Ten tons have been taken off during the past three or four weeks." He sowed (or planted) and now he has reaped—"Aye! be stickin' in a tree!"

Value of Good Queens.—"How often it happens that a weak colony will struggle nearly through the entire honey season

re-queening and getting built up, to bloom out the following season with a vigorous young queen and a hive full of bees, while the best colony the previous season will struggle along with an old or worn out queen and make a dismal failure." This is particularly noticeable where there are two honey seasons the same year.

A Drone Sieve.—"Nail a queen-excluder to the bottom of an empty hive body and set it on top of another hive body close to the hive to be operated on, and shake into this sieve bees and drones from every comb but that on which the queen is found. After shaking the combs put a Porter bee-escape on top, and on this the sieve with the drones, after having brushed off the bees that have clustered on the under side of the sieve. Next morning only drones are left, and a little burning sulphur gets rid of them." A superfluity of drones can thus be easily extinguished.

Texas.—This State has bees on 38,000 farms, with over a quarter of a million hives, and the annual honey production runs to upwards of 7,500 tons. They have many bee-kings in the State. One company operates 1,050 colonies, Mr. Laws has 1,200, Mr. Chambers over 1,000, and Mr. Robinson nearly that number. Of these most secure 50,000lb. to 80,000lb., and in a bumper season "run up to 100,000lb."

Queries and Replies.

[8539] *Bees Eating Fruit.* — Whilst visiting apiaries last Saturday, I was surprised when my attention was drawn to some honey bees devouring pears, in the same manner that wasps do. I should be pleased to hear, through the BEE JOURNAL, if you and others have had a similar experience, as I am unable to find any record of it elsewhere.—H. T., Swindon.

REPLY.—Bees do not attack fruit until the skin has been broken, either by birds or wasps, or by the natural cracking of the skin through too much wet weather. When once the skin is broken, and there is a scarcity of flora, bees will certainly go to most kinds of fruit.

[8540] *Queen Ceasing to Lay.*—Will you kindly tell me through the medium of the JOURNAL if the queen will stop laying at this time of year if the weather is cold and there are not enough quilts on the hive? I have a British Golden queen mated to a Black drone, which has apparently stopped laying. I may say that the stock is not a very strong one, and only covers eight frames. I bought the swarm with a virgin queen late in the season (at the beginning of July) and I have had to feed the bees ever since. I have now started autumn feeding. Is there any way of inducing the queen to start laying again, or is this not advisable?—C. J. M. P., Leicester.

REPLY.—Queens will cease laying in the autumn when food ceases to come in. No doubt, as you have commenced feeding again, the queen will commence to lay. Queens should be kept laying as late as possible.

[8541] *Full Supers and Empty Brood-nests.*—This season I found my supered stocks without a vestige of food in the brood-chamber, not even in the outside frames, although supers were fairly well filled. (1) How may this be accounted for? (2) Is it general this year, or is it only in this particular district?—H. R., Lincoln.

REPLY.—(1) The bees have put all they have gathered in the supers. (2) This often happens where there is a vigorous queen; in a good season the food obtained later is put in the brood-chamber. This year the late honey-flow was absent, and this accounts for the condition of your stock.

[8542] *Cleaning Wax-extractor.*—(1) Would you kindly let me know through the "B.B.J." what is the best way to clean a wax-extractor from the refuse of wax which clogs up the holes in the basket? I find scraping it with an old knife a tedious process, and, after all, it is not clean. I have also tried pouring boiling water over it, but it sticks to the holes all the time. (2) I have one stock of bees at the heather, the nearest stocks being over two miles away, and by the description often given in the "B.B.J.," I fancy it is affected with "Isle of Wight" disease, but I cannot account for it in a stock so far away which has been isolated here for two years. The bees crawl about by the score, and wasps trouble them a lot; also, I left the floor-board down in hope of hot weather, and find that mice have been destroying some of the combs. Would this account for the condition of the stock?—T. D., Merthyr Tydvil.

REPLY.—(1) You will find that turpentine will remove the wax. (2) "Isle of Wight" disease is likely to break out in any stock, no matter how isolated it is. The condition you name would not bring it about.

[8543] *Removing Bees from a Roof.*—A friend of mine has a swarm of bees located under the lead flat of his roof. As far as can be seen, their combs must be situated about 3ft. or 4ft. at least from their entrance hole, which is formed by the bending of the lead at a junction. Taking up the lead is out of the question, but my friend is anxious to be rid of the bees, whereas naturally I as a bee-

keeper would like to possess myself of them. My proposed plan of campaign is to get a nucleus hive, minus one side, fixed tightly over their present entrance, so that bees returning from the fields in the spring will all have to pass through this hive. The nucleus will contain drawn-out combs, and in the early part of the year I shall feed with weak syrup. As soon as the bees appear to be getting pretty strong I shall (unless the queen has, by a great slice of luck, come up into the nucleus hive) put a frame of brood in amongst the other combs, and at the same time fix a Porter bee-escape between the nucleus hive and the old entrance. In this way I shall effectually prevent all flying bees, at any rate, from returning to their old nest, and I hope to draw off at least some of the nurse bees, and perhaps the queen. After leaving the hive in this way for three or four days I shall one night take it right away and stop up the cracks in the lead with putty, which will confine any bees which are still in their old quarters. These are my plans, and my object in writing you is to ask whether they are practicable. If they are not, would you mind suggesting an alternative? —M. O. H., Caterham.

Reply.—Your plan is the only feasible one, but we doubt very much if you will obtain the queen. There is a sporting chance of doing so.

WEATHER REPORT.

Westbourne, Sussex.

August, 1912.

Rainfall, 8·51 in.
Above average 5·89 in.
Heaviest fall, 1·07 on 25th.
Rain fell on 29 days.
Sunshine, 119·4 hrs.
Below aver., 98·5 hrs.
Brightest day, 2nd., 9·5 hours.
Sunless days, 3.
Maximum temperature, 65 on 4th and 30th.
Minimum temperature, 49 on 3rd and 28th.
Minimum on grass, 37 on 28th.
Frosty nights, 0.
Mean maximum, 61·6.
Mean minimum, 51·6.
Mean temperature, 56·6.
Below average, 3·7.
Maximum barometer, 30·114 on 11th.
Minimum barometer, 29·287 on 6th and 26th.

L. B. Birkett.

SCIENTIFIC (?) INFORMATION.

HYPNOTISED BEES.

[It is hardly credible in these days of education and knowledge that such a statement as that given below, taken from a Midland newspaper of August 31st, 1912, should be printed. There is yet a great deal for associations to do in the educational line.—Eds.]

"Hypnotism is practised among insects. A hypnotist tells us that a queen bee can hypnotise her whole hive whenever she wants to. She makes a curious humming sound, and within a moment or two every bee in the colony falls into a hypnotic trance. The death's-head hawk-moth is also a hypnotist of great power. This creature, indeed, makes its living out of hypnotism. Entering a hive, it makes a sound not unlike the queen bee's note, and, the bees immediately sinking into slumber, the moth proceeds to plunder at its leisure."

Bee Show to Come.

October 8 to 11, at the Agricultural Hall, London.—Show of Honey and Bee Produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c. Particulars from F. E. Hardcastle, Secretary, 12, Hanover Square, London, W.

Notices to Correspondents.

W. H. C. (Worcester).—*Black Boot Polish* ("B.B.J.," p. 349).—Indigo may be obtained from any manufacturing chemist at from 3s. 6d. to 7s. per lb. Try Messrs. Burgoyne, Burbidges and Co., 16, Coleman Street, London, E.C. Castile soap will answer equally as well as Crown soap, which it is very similar to.

I. H. J. (Hammersmith).—*Deadly Nightshade.*—Bees do occasionally visit the deadly Nightshade (*Atropa belladonna*), but the amount of nectar secreted by the flowers is so small as to be inappreciable, and neither affects the bees or the honey.

M. W. C. (Burgess Hill).—*Moisture in Interior of Hive.*—The moisture is caused by condensation inside the hive owing to the low temperature outside.

Anxious (Gloucester).—*Sending Honey by Rail.*—It is best to send the 28lb. tins of honey in crates holding two tins each. Nail a thick, *narrow* bar on the top of the crate, so that it will not stand level if placed upside down. This will ensure its being kept the right way up. Of course, the "this side up" label should be put on the top as well.

White Clover (Blackpool).—*A Novice's Queries.*—We find slight traces of "Isle of Wight" disease in the bees sent. They are ordinary English Blacks. We gather from your description that the combs have been tied into the frames; if so, it is possible that the queen was

killed in the operation, and this would cause the excitement and clustering outside the hive. From the appearance of some of the bees we should say they require feeding.

HINCKLEY.—*Death of Queen.*—The abdomen of the queen has been crushed, and no doubt this injury has caused her death.

A. E. B. (Tenbury).—*Fermentation of Honey.*—The presence of bubbles on top of a thin honey is one sign of fermentation. Stand the honey in water heated to a temperature not exceeding 160deg. Fahr.

H. D. P. (Letchworth).—*Sections Granulating.*—(1) The honey has commenced to granulate. It is quite fit to eat, but the majority of people do not like granulated comb honey. (2) We should not advise your keeping them till spring; use them for home consumption.

DRUMCLOG (Ayrshire).—*Queen Dead on Alighting-board.*—The queen is a young one, and shows signs of recent mating. We should say she tried to enter the wrong hive after mating, and was killed by the bees.

F. W. (Cardigans).—*Apiculture in South Queensland.*—Write for a copy of the *Australian Bee-keeper* to Messrs. Pender Bros., West Maitland, New South Wales, and no doubt you will get some addresses of bee-keepers, as this is the only bee-paper published in Australasia.

L. J. C. (Grampound Road).—*Varieties of Heather.*—The three varieties you send are *Calluna vulgaris*, common ling, *Erica cinerea*, bell-heather, and *Erica Tetralix*, cross-leaved heather. The first-named is the best for bees, and produces the true heather honey. Bees also work on the bell-heather, but the honey from this source is thin and of inferior flavour. Opinions are divided as to wintering bees upon heather honey, but many Scottish bee-men winter their stocks solely on honey from this source.

Honey Samples.

B. G. E. K. (London).—No. 1 sample is a light-coloured honey from clover; flavour and aroma are only fair, but it is good in density. No. 2 is a medium-coloured honey from mixed sources, of good flavour, aroma, and density.

CHESHAM.—A light-coloured honey of fair density, but good in all other respects. It would do to show locally, but would not stand much chance at a big show.

Suspected Disease.

A. J. (Nuneaton), CYMRO (Ilford), and D. J. C. (Bawsey Siding).—Bees have died from "Isle of Wight" disease.

Mrs. E. M. (St. Asaph).—In both cases the bees had died of starvation.

EVANS (Lleyn).—The comb contains foul brood.

H. E. W. (Sevenoaks).—It is "Isle of Wight" disease. Apicure is no use for this malady; use Ayles' cure.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* **1d.** *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* **3s.** *per* ½*in., or* **5s.** *per inch.*

PRIVATE ADVERTISEMENTS.

BELGIAN HARES, cross bred, for sale.—Prices from PHILIP JONES, Blakeney, Glos. v 74

WANTED, Wax Extractor, Taylor's largest Gerster improved preferred.—FLOWER, Much Hadham, Herts. v 72

SUSSEX DOWNS HONEY, 56s. cwt.; tins, 3s. 4d., returnable.—WHITE, Alfriston, Sussex. v 70

SPLENDID SECTIONS, 8s. dozen, nominal screw tops, 4s. 6d. for ½lb.; 8s. 6d. dozen 1lb.; bulk 60s. cwt.; sample, 3d.—SIMCOX, Victoria-road, Fallings Park, Wolverhampton. v 66

WANTED, Extractor, also Ripener, in working order.—HORSCROFT, 213, Coventry-rd, Ilford. v 67

CHAMPION bred brindle pied Bulldog, 21 months, magnificent heavy weight specimen, house trained, free from vice, lady's pet, follows well, perfect guard, detailed extended pedigree, £7, or exchange hives, bees, appliances, and cash.—REID, Grove-avenue, Yeovil. v 68

WANTED, first grade Clover Sections, and light-coloured Extracted Honey; post sample.—COOK, Torwood, Ashford, Middlesex. v 65

GOOD EXTRACTED HONEY for sale; sample, 2d.—Apply, Apiary, Chute-Standen, Andover. v 71

FINE ENGLISH HONEY, medium colour, in screw cap 1lb. bottles, 8s. per dozen, taking not less than ½ gross.—G. GEARY, Moulsoe, Newport Pagnell, Bucks. v 76

30LB. prize Beeswax, 1s. 7d. per lb.; few grand heather Queens, 2s. 6d., in cage.—THOMAS HOOD, Pickering. v 78

FOR SALE, a well-known Berkshire Apiary, consisting of thirty-seven strong, healthy, Stocks of Bees (twenty-seven frame hives and ten skeps, with section racks and extractor, and other appliances). The Bees have recently been inspected by the Association Expert, and pronounced healthy and strong. Price for the whole, £30, to effect an immediate sale—F. W. WOODLEY, Chilton, Steventon, Berks. v 83

17 COLONIES of BEES, Extractor, and Ripener, 5s. each.—SIGGERS, Dunham. v 77

"THE Harvest of the Hives," by Rev. Gerard W. Bancks, M.A., new edition, price 6d., may be obtained at any of Messrs. W. H. Smith and Son's Bookstalls. v 81

FOR SALE, 12 W.B.C. Hives, perfect condition; 11 strong Stocks, on 10 frames; 16 racks, shallow frames all drawn out; clearers, feeders.—S. CORNISH, North Row, Warminster, Wilts. v 59

Editorial, Notices, &c.

THE B.B.K.A. CONVERSAZIONE.

The coming conversazione of the B.B.K.A., to be held in the Lecture Hall at the Zoological Gardens, Regent's Park, on October 10th, promises to be an interesting one. The Council have taken advantage of the occasion when the many country members who usually come up for the Dairy Show are in town, to arrange one of the Special Lectures under the Development Fund Scheme, to be given by Mr. R. Tabor, B.Sc., of the Technical College, South Kensington. Mr. Tabor is well known as a horticultural lecturer, and as he has also had practical experience of bee-keeping, he is well qualified to address a meeting of bee-keepers on "The Fertilization of Flowers by Bees." The lecture will be illustrated by lantern slides.

Then Miss M. Dagmar Sillar, just returned from South Africa, where she has held an appointment at the Government Experimental Farm, O.R.C., for several years, has promised to read a paper on bee-keeping in the colony. In order that those having trains to catch may be able to remain to the close of the proceedings, the conversazione will commence a little earlier than usual. Tea will be provided at five o'clock, and it is hoped that members will bring their friends, all who have any interest in the subject being welcome. The hall is easy of access, either by tube to Camden Town Station, or by motor-omnibus, service 3, from Piccadilly Circus.

SOUTH OF SCOTLAND B.K.A.

ANNUAL SHOW.

The twentieth annual exhibition of the South of Scotland Bee-keepers' Association was held in St. Mary's Hall, Dumfries, on Saturday, September 14th. In spite of the fact that this was a poor season for honey production there were over thirty more entries than last year, a year that was considered a record one for honey production in Scotland. The quality of the exhibits, too, was excellent, scarcely a poor sample being staged, and in the open and Cup classes especially, the judges had some difficulty in coming to a decision. Some of the awards went to England this year, but the bulk of the prizes were carried off by local exhibitors.

Mr. J. Ross, Dumfries, judged the extracted honey, and Mr. W. Hogg, Castle-Douglas, judged the comb honey classes. The arrangements were carried out by the honorary secretary, Mr. Q. Aird, Howwood, and a local sub-committee.

The following is the list of prize winners:—

OPEN CLASSES.

Three 1-*lb. Jars of Extracted Honey*—1st, K. Dobie, Dumfries; 2nd, J. McDonald, Lochfort, Dumfries; 3rd, J. M. Stewart, Mollance, Castle-Douglas; v.h.c., Jas. Halliday, Slogarie, New Galloway; h.c., H. C. Barlow, Newcastle, Staffs.; c., Jno. Henderson, Cumnock.

Three 1-*lb. Sections.*—1st and 3rd, John McDonald; 2nd, K. Dobie; v.h.c., Alex. F. Borland, Cumnock; h.c., Jas. Smith, Kirkmahoe; c., J. G. Nicholson, Langwathby, Cumberland.

Single 1-*lb. Jar of Extracted Honey.*—1st, Sidney Sanderson, West Wratting; Cambs.; 2nd, K. Dobie; 3rd, Wm. S. Halford, West Wratting Lodge; v.h.c., John McDonald and J. M. Stewart; h.c., Hy. Ward, Leamington Spa, and K. G. Panter, Dumfries; c., H. C. Barlow.

Single 1-*lb. Section.*—1st, John McDonald; 2nd, K. G. Panter; 3rd, K. Dobie; v.h.c., A. F. Borland; h.c., J. G. Nicholson.

Beeswax.—1st, J. M. Stewart; 2nd, K. Dobie; 3rd, W. S. Halford; v.h.c., Wm. Dunlop, Auchencairn; c., Sidney Sanderson.

MEMBERS' CLASSES.

Super of Honey.—Wm. Lockerbie, Lochfort.

Three 1-*lb. Jars Granulated Honey.*—1st, K. Dobie; 2nd, J. McDonald; 3rd, J. M. Morton, Dumfries.

Six 1-*lb. Sections.*—1st, A. White, Cumnock; 2nd, Jno. Henderson; 3rd, K. Dobie.

Three 2-*lb. Sections.*—K. Dobie.

Six 1-*lb. Jars Light-coloured Honey.*—1st, J. M. Stewart; 2nd, Jno. Henderson; 3rd, John McDonald.

Six 1-*lb. Jars Medium-coloured Honey.*—1st, K. Dobie; 2nd, J. M. Morton.

Two 1-*lb. Jars Honey (Challenge Cup Class).*—1st, K. Dobie; 2nd, A. White; 3rd, J. McDonald.

Two 1-*lb. Sections (Challenge Cup Class).*—1st and 2nd, J. McDonald; 3rd, Jas. Smith; v.h.c., K. Dobie.

Three Heather Sections.—1st, J. M. Morton; 2nd, Jas. Halliday; 3rd, A. White.

Six Heather Sections.—J. Halliday.

Six 1-*lb. Jars Extracted Honey (novice).*—1st, W. Dunlop; 2nd, Wm. McCormack, Ringford.

Six Sections (novice).—1st, W. Lockerbie; 2nd, W. Dunlop.—Q. Aird, Hon. Sec.

CASTLE CARY AND DISTRICT B.K.A.

The Castle Cary and District Branch of the Somerset Association held its first show of honey on August 29th, at Bruton, in conjunction with the East Somerset Agricultural Society's Show. Probably, owing to its being their first show, and as the society were not in a position to offer very large sums in the way of prize money,

there was not a very large display, but the sixty exhibits that were staged were all excellent in quality. The day was fine, and the visitors to the honey tent were both numerous and continuous. The success of this initial attempt justifies the hope that it will be an annual show. The only catastrophe was the non-arrival of the bee tent, which caused much disappointment. Mr. H. Bigg-Wither very ably officiated as judge, and made the following awards:—

Six 1-*lb. Jars Extracted Light Honey.*—1st, A. H. Bowen, Cheltenham; 2nd, R. Litman, Castle Cary; 3rd, E. J. Harvey, Evercreech; v.h.c., W. A. Carver, Castle Cary.

Six 1-*lb. Jars Dark Extracted Honey.*—1st, W. A. Carver; 2nd, E. J. Harvey; 3rd, W. Evans, Wincanton.

Six 1-*lb. Sections.*—1st, E. J. Harvey; 2nd, W. Evans.

Display of Honey and Bee Produce.—1st, E. J. Harvey; 2nd, W. A. Carver; 3rd, R. Litman.

Three 1-*lb. Jars Light Extracted Honey.*—1st, R. Litman; 2nd, W. A. Carver; 3rd, W. Evans; v.h.c., E. J. Harvey; h.c., T. Hale, Skepton, Montague.

Three 1-*lb. Jars Dark Honey.*—1st, V. Davis, North Barrow; 2nd, W. A. Carver; 3rd, E. J. Harvey; v.h.c., R. Litman; h.c., J. Bindon, Bruton.

Three 1-*lb. Sections.*—1st, V. Davis; 2nd, W. Evans; 3rd, T. Hale; v.h.c., E. J. Harvey; h.c., R. Litman.

Two Shallow Frames.—1st, E. J. Harvey; 2nd, W. A. Carver; 3rd, R. Litman.

Beeswax (put up in 2oz. blocks).—1st, E. J. Harvey; 2nd, W. A. Carver; 3rd, W. Evans; v.h.c., J. Bindon; h.c., C. Parsons, Castle Cary.

GIFT CLASSES.

1-*lb. Jar.*—1st, J. Prior, Hildon; 2nd, W. A. Carver; 3rd, R. Litman; v.h.c., W. Evans.

1-*lb. Section.*—1st, T. Hale; 2nd, W. Evans.

Thanks are due to the Agricultural Society for the kindness shown to the Association during the show.—R. LITMAN, Hon. Sec.

CRYSTAL PALACE B.K.A.

A new Bee-keepers' Association, to be called the Crystal Palace Bee-keepers' Association, was successfully inaugurated at Sydenham on September 17th. All bee-keepers in the districts of Anerley, Penge, Forest Hill, and Dulwich are invited to write for particulars to the Hon. Sec., Mr. W. Broadhurst, Taymount, Queen's Road, Forest Hill, S.E. A general meeting will be held on October 16th, to formulate a programme for the winter, and at which a lecture to further stimulate interest in the undertaking will be given.

THE W. B. CARR MEMORIAL FUND.

In response to the appeal for subscriptions to the above fund, the following sums have been received:—

	£	s.	d.
J. Pearman	0	5	0
Mrs. Pearman	0	2	6
G. J. Flashman	0	2	0
W. F. Reid	0	5	0
J. Smallwood	0	2	6
Thomas Bevan	0	2	6
Arnold Richards	0	5	0
Arthur G. Pugh	0	5	0
G. W. J.	0	2	0
O. R. Frankenstein	0	5	0
E. Walker	0	5	0
G. R. Alder	0	2	6
J. J. B. Lamb	0	3	0
Col. H. J. O. Walker	0	5	0
	2	12	0

AMONG THE BEES.

UNHEALTHY POLLEN.

By D. M. Macdonald, Banff.

The exceedingly interesting series of papers, with accompanying illuminating illustrations, by Mr. George Hayes, of Beeston, so well covers the field that I would refer readers to them. I have no doubt that, by-and-bye, we will have them reproduced in book or pamphlet form for handier reference, as they richly deserve such preservation. Any interested might also read up what Messrs. Crawshaw and Sladen have recently written about the gathering and storing of this indispensable requisite to the full success of a colony of bees. This will save me repetition, or "poaching" on any other man's preserves.

Mankind and animals require at least two kinds of food to nourish and sustain life, and enable them to keep up a store of vital energy. The one is a flesh-former; the other a heat-former. One is a nitrogenous, the other a non-nitrogenous food. Honey is an indispensable requisite, but all through its existence the bee requires this food plus a supply of "bee-bread" to enable it to carry out its functions and duties in and out of the hive. Now it is necessary, to accomplish this purpose and enable the bee to make the most of this proteid food, that the pollen carried into the hive should be fresh and healthy. We make a great ado about the honey for wintering being well sealed and matured, while we bestow patient care on the manufacture of syrup for feeding bees, more especially if it is to be used for winter stores in the hive. Unripe honey, nectar

late gathered and stored in a thin and watery condition, or badly made syrup, cannot be healthy food for bees, as we too often find to our cost. Just as certainly pollen badly stored, that kept too long in the hive, such as turns hard in the cells, and any turning mouldy in early spring, must prove injurious when consumed by young or old bees. Possibly, instinct teaches our prescient little friends to reject or eject the greater part of any such deteriorated food, but there is always a real danger that under stress of circumstances they may have to fall back upon unhealthy stores of pollen. Although, from close observation, I am confident such food acts prejudicially, especially in the spring time, yet it is not in general a very serious evil, as bees quickly discover the ill-effect and adopt the fresh supply as soon as it is available, and neglect the deteriorated article.

The case is entirely different, however, when breeding is at its height in early May and late August, if *frozen pollen* is carried in extensively to be stored in the hive. This is a frequent occurrence, at least in this locality, where we are subject to sharp frosts until the end of the first week in June, when only can we safely plant out our bedding borders. This year we had a touch of early frost on 20th August, when several tender flowers were injured, and even potatoes had their top leaves browned. On September 23rd we had again a very sharp spell. During early June, too, we had so hard a frost that lime leaves were shrivelled up as if they had been singed, with the effect that new foliage came on slowly in July, and the trees were flowering only in September! These instances show what difficulties have to be encountered at times by the apiarist.

It must be recognised that such injured or deteriorated pollen cannot be a healthy food for young or old bees, and investigation shows it is not. When the brood-nest is examined whole patches of brood may be found looking sickly and flabby. The pure, pearly white of the healthy larvæ gives place to a dingy grey or dirty yellow. The growth of the grub is arrested, bees seem to realise that further attention in the way of feeding is so much labour lost, and, as a rule, they fail to seal over the cell even when the inhabitant is at a stage when this process should be attended to. In the cases I had under observation I fancied nurse bees investigated the nature of the evil, but if so they eventually passed on to more pressing duties. A spell of fine weather with a new supply of pollen acted like magic. Every cell was quickly cleared out and polished for the use of the queen, who soon consigned eggs to every one of them, which eggs followed the normal course. There was no distinct smell from the decaying larvæ, but still, when in large quantity, there seemed to be a slight taint perceivable. In combs withdrawn and kept for some time, it became more markedly appreciable. In no case were there any signs of infection being transmitted; all the evil followed the introduction of the injured pollen, and ended with the withdrawal of the sickly larvæ. But there was a distinct poisoning of the young traceable to feeding on this deteriorated bee-bread, thus proving it was an unhealthy food. Although not so frequently observed, the adult bee was also injured by the consumption of this frosted pollen. In cases vertigo seemed to follow, "drunken" bees came out, as an old bee-keeper called them, and tumbled down the flight-board; frequently others showed distinct dysenteric symptoms, while at times fair numbers suffered from a species of *paralysis*. The abdomens in these last instances were heavily distended, the wings seemed to fail in their duties, and occasionally the legs appeared cramped, for locomotion was crippled and slow. If these bees succeeded in evacuating, they would at once make back for the hive, although rather listlessly.

A bright day or two, yielding supplies of fresh pollen, always suppressed all symptoms of these ailments. When the weather continued persistently bad and inclement, a feeder containing mildly-warm syrup in one division and a supply of artificial pollen in the other worked a cure. We bee-keepers are generally very particular in feeding our bees carefully on prepared heat-forming food, but rather curiously pay no regard to the proteids, although, in some ways, they are *more* important in securing healthy bees, both young and old. Another section of my subject has also to do with healthy honey, but this must, for the time, be postponed.

A BEE-KEEPING NOVEL.

Mr. Tickner Edwardes, the well-known author of the "Lore of the Honey Bee" and other delightful books in which bee-keepers and bees occupy a prominent position, has written a "bee-keeping" novel, which will shortly be published by Messrs. Hutchinson. The principal characters are bee-keepers, the scene being a south of England village. This is the first romance, we believe, in which the plot concerns bee-craft, and its novelty will recommend it to all who have ever kept bees; while Mr. Edwardes' reputation as a fascinating writer will cause the issue of the first novel from his pen to be awaited with pleasant anticipation by all who are acquainted with his previous works.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES FROM ALLAN VALE.

[8560] *Heather Honey for Wintering.*—I have noticed the controversy on this subject in the pages of the JOURNAL, and think that the following observations may be interesting to some. I have lived for the last fourteen years in my present position, and kept my bees within a hundred yards of the same locality all those years, yet never till the last two winters have I known them to be troubled with dysentery. In the spring of 1910 one of my stocks was suffering severely, but as the summer came on it quite recovered, and did the best of all my hives. Last winter this stock was again attacked worse than ever by this malady. The bees never seemed at rest, and were crawling about the alighting board, whilst many were crowding round the entrance to the hive, which was in a most filthy condition. I began to suspect that I had "Isle of Wight" disease amongst my hives, as others were suffering in the same way, but not nearly so severely; then came the only sharp snap of frost we had all the winter. During the time that it lasted the bees in this hive were quite quiet, and I thought I had seen the last of them as many had died; but no, to my surprise, when the frost broke out they came again, stronger than ever, and from that time they began to recover. As the spring went on the hive soon became strong in bees, and on the 6th of July threw off a very large swarm, yet leaving the old hive very full of bees. I took from it two combs full of brood, with a queen cell in each, one of these I gave to a hive with a drone breeding queen. With the other I made a nucleus, shaking off the bees from two or three combs, and filling up with three spare combs. On examining since I have found a young queen in each of these hives, so I have three and the old queen, which I am keeping for another year as she is a splendid breeder. On the 24th I put the original stock into a clean hive with fresh combs and foundation. I shall now see how it gets on, and whether it is again attacked with dysentery. The bees filled two racks of sections before they swarmed, but did not seal them. This seems a common experience with bee-keepers this summer, I see. I have given the details concerning this stock because the symptoms—some of them at least—seemed very like the "Isle of Wight" disease, and yet the subsequent history of the hive evidently shows that it was not so. Now as to cause. I do not take my bees to the heather, as they are able to reach it where they stand. The last two summers they have gathered a good deal of heather honey, and I expect some, at least, of it would be unsealed in the brood combs when the cold weather came on; this they would use first. Also that which was nearest the middle of the hive and would be last stored, this may not have been capped over. I am inclined to believe that it was this honey that caused the severe attack of dysentery, as I can account for it in no other way—this hive had no syrup in the autumn, and no candy through the winter. It would be when this honey was finished in the spring that the bees began to recover. Two other hives had dysentery, and the bees died out. Last winter was dull and sunless, with low temperature, but without much frost, so that my bees scarcely got out for a cleansing flight from October till March. They got little or no winter sun on the hives. I am inclined to think that bees wintered on heather honey will do well enough if they can get frequent cleansing flights, but when they are unable to leave their hives for a length of time, then the honey is injurious to them. Position seems to make a great difference to bees. A good clear flight without having to rise over trees when weary is very advantageous to them. My neighbour's bees only a few hundred yards away always seem to do better than mine. Some others about a mile away in the valley did better still; mine have done very little this summer.

An Unknown Sense.—I see this matter referred to again in "B.B.J." (page 353). Some years ago I remember writing on the subject in the JOURNAL. I have a bee house in which I keep three or four hives; this autumn I painted it, a bright green—it was formerly slate colour. The alighting board extends the whole length, this I repainted slate colour. The smell of the paint I noticed seemed in no way to confuse the bees in returning to their hive, neither the change of colour, but when I moved one of the hives about three inches along from its original position the bees all returned to the old spot. This they continued to do for a considerable time, so that the movement of only three inches, which made no difference in the surroundings of the hive, seemed to perplex them, and to put them out in their calculations.—HUMBLE BEE, Allan Vale.

MORE SELF-HELP REQUIRED.

[8561] The article (p. 326) by Mr. D. M. Macdonald is a sad illustration of desolation and helplessness in the face of such a simple matter as infectious paralysis. Yes, a quite simple matter where the apiarist has confidence in himself, and takes reasonable precautions. A scourge it can be, and an insidious disease only where carelessness ensures its own reward.

By all means let us have the inspector if he is going to wipe out the apiaries of those who will not help themselves, and who are a source of danger to their more persevering neighbours; and there are an increasing number of the latter who are becoming aware that the "Isle of Wight" disease is not so much to be dreaded after all.

It is quite likely, however, that under legislation induced by panic many more stocks of bees will be destroyed quite needlessly than are likely to be ruined by the actual complaint.

Mr. Macdonald refers to the advantages of drastic legislation in the case of Foot-and-Mouth disease in cattle; but it is probable, under the present stringent regulations, that many more animals are destroyed needlessly and foolishly than would be the case if the affected beasts were isolated and properly treated, as they can be. The restrictions as to moving cattle are, of course, quite in order, but before the Government stepped in, because of the carelessness of helpless and shiftless owners, farmers can tell of the ease with which they cured affected animals, and how many others in the same yards did not take the disease at all.

But bees can fly, I am told. Certainly; but it is not so much because bees can fly, but because the owner has been unprepared to meet or treat the disease, or has been careless in doing so, that the malady has spread through whole apiaries, or from one apiary to another.

For instance, it is not enough that the operator should wash his hands after any manipulation. He should not manipulate at all without keeping his hands wet with a strong disinfectant all the time, and should damp the smoker and other tools used in like manner.

He should not open any hive affected, unless he there and then sprays the bees and combs with a suitable germicide. He should also take the utmost care not to tread on any dead or crawling bees, but no matter at what expense of time, he should collect these daily, or several times daily,* and put them out of harm's way.

I can assure Mr. Macdonald and others who say there is no cure, and who are blind to numerous facts already reported in the columns of your valuable journal, that every one of the stocks he has lost could have been cured, and not only so, but that each of them could have been made into at least two healthy, profitable stocks, more populous than the original colony.

Black bees certainly are more difficult to treat than are good strains of Italians, Carniolans, and some others; but there is no excuse for those who are prejudiced in favour of black bees, when they say there is no method of cure. They have to break away from their old prejudices, and use those bees that are practically immune, or that may be readily rendered so—largely by the yearly renewal of queens, which will be found the great basis of immunity.

Some few years ago our friend, Mr. Macdonald, referred to me in the pages of this journal as "one of the simpletons" who believed that a change of queens (and I would remind him, a change from natives) would eradicate brood diseases. I was able to calmly smile at the gentle insinuation, having as an invaluable possession, the knowledge of facts gained by many years of successful experience.

I was not only one of those simpletons, but the great simpleton who first insisted upon the necessity of changing queens after a period of queenlessness. I had noticed this remarkable fact ever since the seventies of last century, and from that time onwards had never failed to observe the beneficial effect of such treatment, and have frequently insisted upon the same to the benefit of many bee-keepers.

Mr. Alexander, of America, recently confirmed my position by his successful experiments in the same direction. More recently still, the definite cure of foul brood in the same way by a French bee-keeper, after my own and Mr. Alexander's articles had been quoted in the French journals, was mentioned in the BRITISH BEE JOURNAL for December 3rd, 1908.

Knowing, therefore, the value of fresh blood, and the great impetus given to any diseased stock by the addition of a vigorous young queen, I have frequently advised the same course to be followed by correspondents who ask my advice about the "Isle of Wight" complaint, and the plan has met with very satisfactory results.

Not only a young queen, but in the case of weak stocks, I advise the addition of healthy brood and bees. The new queen is to be given after a short interval; in the case of a virgin being added, a period of seven days is allowed, but if a fertile queen, then after fourteen days. With a stock in the secondary or final stage of the disease, the addition of brood and bees is particularly desirable.

Some discussion has taken place as to

*Undoubtedly it is because of neglect, principally in this direction, that the complaint has spread locally.

the desirability of finding a race or strain of bees that will be immune. I may say that strain already exists; but it is in the power of every intelligent owner to ensure that his bees are immune, or practically immune, so that his honey results may be larger than he has hitherto known.—S. SIMMINS, Heathfield.

(To be continued.)

FINDING A MARKET FOR HONEY.

[8562] I can sympathise with "Irishman" (page 386) with regard to his difficulty in finding a market for his honey. I find it most difficult to dispose of extracted honey at a reasonable price. It appears to me that grocers and others expect to buy it at about 5½d. and 6d. per lb., all expenses paid, that is to say, at the same price as inferior foreign honey. Confectioners say that for their purpose, that of making cakes, &c., a high class article is no better than the cheaper kinds, while grocers, I presume, can make more profit out of the cheaper foreign material, as they find the general public prefer cheapness to quality.

I advertised my honey in a trade paper, and had some dozen or so applications for samples. At first I asked the price at which you had kindly valued it for a sample of medium-coloured fruit blossom honey, then I gradually lowered the price and offered light-coloured clover honey, carriage paid, but so far I have not sold a single pound through that advertisement. I am told that there should be a good market in towns near; quite right, so there should, but unfortunately the local markets are flooded with honey from a certain company, which I understand sells at 8s. per dozen in 1lb. glass jars, probably carriage paid. Although it is guaranteed clover honey, it is certainly very inferior, in appearance at any rate, to the honey which we produce in this district, and which is invariably classed as clover honey when we send samples to the "B.B.J." office.

My few retail customers come again and again for my honey, but there is not the scope here, nor have I the time to develop a retail trade sufficient to dispose of all the honey I can produce, especially as we have already a goodly number of bee-keepers in this district. There is no doubt whatever, that what is really wanted in this country is that the public shall be educated into the consumption of honey. I understand that in Canada honey is always on the table at meal times, and that it is the exception to enter a house where it is not eaten. Consequently it has a prominent place in grocers' shops. But what is the case in England? One seldom sees honey in the shops, and when one does, it is usually foreign honey at 6d. or 8d. per lb. People try it once, but they do not care for it sufficiently to have any more. Give them, however, a good sample of English clover or fruit blossom honey, and I feel certain that they will come again. It is hard to induce some people to try it. If you give them a jar they put it in the cupboard and forget all about it. Very often because they do not like it themselves they do not think their children ought to have it. In other cases it is looked upon as a medicine, or it is used as a means of administering medicine, with the result that children take a dislike to it which they never get over. I have known many people with a dislike for honey whom I have at last induced to try some of mine, with the result that they took to it with relish. Presumably they had previously only tried cheap grades of foreign stuff. The public should have honey constantly put before them, and its value as a regular article of diet explained; but this can only be done by the expenditure of considerable capital, which would be out of the question for single individuals. I consider that more good could be done to the industry in this way, than by inducing people to enter the already well-filled ranks of bee-keepers. I shall be told that this is a selfish view to take, but is it not a fact that most of the trouble with disease (with the exception of the "Isle of Wight" disease) is due to those who have tired of bee-keeping, and are too dilatory to give their stocks proper attention? I believe and trust that the proposed Bee Diseases Bill will remedy this trouble.

In conclusion, I should like to ask, with an apiary producing two or three tons of good quality honey annually, what you would consider a fair average price in 28lb. tins, and per dozen in 1lb. screw-capped glass jars?

Thanking you in anticipation, and trusting that I have not intruded too much on your valuable space.—B. B., Kent.

[6d. to 8d. per lb., 8s. to 9s. per doz.—EDS.]

BEES IN THE "ISLE OF WIGHT."

[8563] I hasten to oblige Mr. Parker, of Ryde, with names of two bee-keepers in the Isle of Wight who stated they had not experienced any loss attributable to the disease during the past six years.

First, about nine old-fashioned skeps, crowded with bees, about a mile from the "Dairymaids' Memorial Chapel," at Arreton, belonging to Mrs. Young. This lady, in conversation, showed herself a staunch supporter of the old-fashioned methods, and spoke with pride of the honey prizes her husband had secured at local shows in the past. The hives are on the coach road from Ventnor to Cowes, for all and sundry to notice, and I took a snapshot to convince my friends.

Second, about a dozen frame-hives full of healthy stocks are the property of Mr.

Sparks, Chale Brewery, near Black Gang. This gentleman is quite up-to-date in his methods, as he imports and introduces foreign queens when necessary. This procedure is considered by some apiarists to be the cause of some of the trouble experienced in the island, but in this instance the results are eminently satisfactory. I saw the brother of the apiarist, who kindly showed me the bees.

I may say I rode practically all over the island, from Cowes to Ventnor and across from Totland Bay to Bembridge, where I saw quite a hundred swans in the harbour. As a holiday resort for brother bee-keepers, I can highly recommend it. The only regret I experienced was that the busy hum of our little friends was absent in some of the most ideal spots.

I hope our friends over in the island will start again, and that success will crown their efforts.—OLIVER C. JONES, Ipswich.

BEE-KEEPING IN SCHOOLS.

[8564] On July 10th last I received a visit from T. Johnson, Esq., H.M. Inspector of Schools for Cottage Gardening and Bee-keeping, and enclose for your inspection a copy of his report upon my work in the school.—CHAS. CHADWICK, Headmaster, School House, Norton-in-Hales, Market Drayton.

Aug. 26th, 1912.

1. At this school practical bee-keeping is taught as a branch of Nature study. A bar-frame hive supplied by the Education Authority has been stocked with bees from the headmaster's apiary.

2. A comprehensive syllabus of lessons in practical bee-keeping has been drawn up, and already the boys and girls of the highest class have a very considerable knowledge of the subject.

3. Careful notes and records are written by the children and very thoroughly supervised by the teacher.

4. The children manipulate the hive fearlessly and with evident enjoyment of the work. It would be well, however, to see that every child is provided with a veil when handling the bees.

5. The class at present is too large for effective practical work. It is suggested that lessons dealing generally with the subject should be given to the whole class, but that a special class of not more than fourteen children should be selected for a specially complete study of bee-keeping. This class should be chosen from children whose homes make it likely that they will be able to keep bees on their own account.

6. There seems to be a good opportunity for a course of woodwork in connection with the bee-keeping. The headmaster holds the certificate of the City and Guilds of London Institute for Woodwork, and it is understood that the managers are willing to build a shed to hold one or two carpenter's benches, if these could be provided.

USE OF AIR SPACE IN W.B.C. HIVE.

[8565] In the "B.B.J." of September 26th (page 384), I notice Mr. Sloan says he packed straw-chaff between the brood-chamber and outer covering of his hives. This he found unsatisfactory, so he is going to try pine sawdust this winter. Now, I hold the view that the air space between the brood-chamber and the outer cover is the finest non-conductor of heat obtainable, and is the chief reason of the W.B.C. hives' success for wintering bees. If a chaff cushion is made to fit the inside of the outer cover, so that when placed on the hive and pressed evenly down it encloses the air between the brood-chamber and outer case, this air then has to percolate through the cushion in the same way as that in the brood-chamber itself, therefore an equable temperature is maintained. I find the best plan is to have the cushion amply large, so that the chaff can be placed well into the corners. These cushions are very convenient for covering up the feeders, and it is surprising how warm the syrup will keep under a cushion of this description. I have seen hives covered up for winter with this space open, so that the air coming through the cone bee-escape in the roof causes a draught of cold air around the brood-chamber. This must be detrimental to the bees, and spoils what I take to be the essence of construction of the W.B.C. hive.

May I take this opportunity of saying how I enjoy reading "Helpful Hints to Novices." The hive I wrote you about a little time ago, in which the bees were being brought out, many crawling about apparently unable to fly, soon recovered, and I have packed it down for winter crowded with bees.—A. B. S., Edgbaston.

A PROFITABLE STOCK.

[8566] Having lost all my bees with "Isle of Wight" disease last winter, I purchased a stock early in May, and did not let the bees swarm. I have this season taken from them sixty sections and 43lb. of extracted honey, which I think is a very good return, considering the wet weather we had in June and August. Of course, I did not take any from the brood-nest.

I have had no difficulty in selling my honey, thanks to a small display that I was able to make at our village flower show. On the show-day I sold over £3 worth, and I now have only six jars left for household use. I shall try this plan another season.—S. W. B., Rudgwick.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Wax from Fat (p. 335).—Is not the pseudo-scientific statement untrue that bees cannot secrete wax on a sugar diet? I have certainly had comb built by sugar-fed bees during a dearth of nectar, though it is true they had access to natural pollen. But I venture to think that bees placed in late autumn in a bare hive having a liberal supply of candy above the frames would build some comb without bringing in either pollen or nectar. This is only a guess, of course, and such "proof" is hardly "scientific." Whether the feeding of cream would help I cannot say, but perhaps buttermilk honey would result, or possibly to endeavour to cause the bees to "wax" fat would result in their kicking like Jeshurun. A diet of fat is not essential to produce fat, as Mr. Williams seems to assume or accept. Sugar and honey are carbo-hydrates of fat-forming potentiality, and that there is no fat in honey is shown by the injunction to eat butter with it.

Temper of Bees (p. 335).—Mr. Freeman evidently does not subscribe to the theory that the nurse-bees transmit characteristics, or he would not advise the rearing of a queen in the vicious hive. In any case, this operation and the cutting out of queen-cells means several troublesome manipulations. And such a queen might mate with the undesired strain, with no better result. Drones from such stocks should be mercilessly suppressed and a fertile queen introduced at such time as the brutes cannot avoid acceptance. If I had a single unmanageable stock, I would fumigate it past resistance, take away all combs and substitute foundation. Put the bees into a ventilated box until they recovered, and run the swarm back into its hive through excluder. Place a caged queen over the frames, and destroy the old queen. If the removed combs were given to another stock above excluder, after beheading all drones, they should be looked over in a week's time for possible queen-cells, after which the trouble should automatically cease.

Frame-hive Skeppists (p. 336).—Mr. Mason has accurately described a state of things which obtains not alone in East Yorkshire. Frame hives have been preached and advocated to such an extent, that many old bee-keepers who have the skeppist frame of mind have adopted them, only to "manage" them on the old lines. The result is the reverse of beneficial. The combs are generally built from starters only, where foundation is used at all, and they lack the beneficent renewal which periodically occurred under the old system. The resulting state of things may be imagined. I have a recently discovered case in mind, where a number of healthy skeps stand beside "frame-hives" (sic.) reeking with foul brood of old standing. It is not, I think, that the original preaching is altogether wrong, although too much stress is laid upon profits, as that there is considerable difficulty in following it up with further instruction.

Are Driven Bees Cheap? (p. 337).—I think that Mr. Mace is a little severe upon driven bees. Even taking his figures, which appear high, the comparison favours the driven bees, for they should be in a more forward state when compared in May with a purchased swarm, and at least nearing the time when they will cast a swarm of their own. So that the point he makes about moribund money is negligible, for the money is earning interest in the shape of brood and honey. Again, swarms are often unobtainable so early as May. In some districts June is the likelier month, and even southern swarms advertised for May are sometimes not supplied until the later month. The possibility of winter loss is real, but whilst this depends to a large extent upon the ability of the bee-keeper, it applies also to established stocks; and the argument would, if pushed to its conclusion, warrant the autumnal destruction of all stocks and the purchase of spring swarms. Even should the driven stock dwindle, as is sometimes the case, the queen may be needed for some other stock. Perhaps a sounder practice than feeding heavily is to give the driven lot a few fat combs from other wealthy stocks. Such combs may be provided during summer for the purpose. Of course, the extra value of such combs may be the equivalent of the price of a swarm, but as I have already indicated, much of the value still exists when May whitens the hedges with blossom.

Bees by Aeroplane (p. 344).—May I recommend those bee-keepers, who adopt this mode of transit to the moors, to give rather less ventilation than usual, on account of the cold and the draught. Mr. Ellis no doubt contemplates the construction of special landing grounds on the moors, for any disaster in alighting would probably finish off what was left of the avi-apiator. By the way, I am interested to note the use of the term "apiator," to which Mr. C. M. Eales has kindly drawn my attention, by my maternal ancestor, Samuel Bagster, in his book on bees.

Bees in Chimneys (p. 345).—Would it not be occasionally possible to evict by the following method:—Drop a line attached to a weight down the chimney, and pull up some strongly carbolised cloths. Allow the cloth to remain below the nest, and when the bees pour out, draw up slowly. Hive the bees on combs with young brood, in a box attached to the chimney stack.

Close the chimney with a bee-escape. In a week or two allow the bees to clear the honey out of the chimney, and later break down or remove the empty comb. Set the chimney on fire to make a finish to a good job!

A Productive July Swarm (p. 354).—This letter supports, to some extent, my contention *re* driven bees. Here is a late swarm throwing two swarms in April, and giving a large return of honey in 1912! Allowing for the fact that driven bees might have to be fed for the winter, we have here almost a parallel to the case I have endeavoured to outline above. What May swarm could have equalled this splendid result?

Queries and Replies.

[8544] *Preparing Honey for Exhibiting.*—In preparing run honey for the show-bench I am much troubled with *small* air-bubbles in very dense samples, which after the honey is bottled, detract from its appearance unless removed by immersing the jars in water heated to 130deg. Fahr. To *effectually* clear these *minute specks* out takes from four to five days, and I am in doubt whether honey kept in hot water for such a period does not deteriorate in flavour and aroma. I may state I *run* my show samples through straining material, and do not use either extractor or ripener in the process. (1) Could you give me any plan which will do away with the long immersion of the jars in hot water, so that the end desired might be arrived at in a shorter time? Is the heat (130deg.) too little? Should I subject the honey to a higher temperature (*at first*) with the idea of getting clearness and brilliancy in, say, one day; if so, what temperature?—UNA, Ayrshire.

REPLY.—You should buy "Producing, Preparing, Exhibiting, and Judging Bee Produce," by W. Herrod, in which all details are given. If you heat to 160deg. Fahr. the honey will not be spoilt, and the air globules will rise more quickly.

[8545] *Pollen Gathering.—Two Stocks in One Hive.*—(1) Is nectar contained in what, to the eye, seems to be pollen that the bees are carrying? I am asking this for two reasons: first, I see bees which are working on nectar-yielding flowers are gathering pollen; and, secondly, honey is being stored in hives of which I am told all bees bring in pollen only. (2) I have a hive of six storeys. The lowest contains brood-frames, partly filled with pollen and unsealed honey. Above this (with queen-excluder between) is a brood-chamber containing a full stock of bees, with queen and ten frames of brood; over that (separated by queen-excluder) a rack of shallow frames, partly filled. Above this is a rack of sections, partly filled; over that (with excluder between) a brood-chamber with full stock of bees, including queen and ten frames of brood; and above that a rack of untouched shallow frames. The upper stock has its own entrance. May I expect the bees to go on filling the supers, and which ones will they work first? Thanking you in anticipation for replies in "B.B.J."—"BARBERTON QUEEN," Natal.

REPLY.—(1) Pollen is carried in the pollen baskets of the bee situated on the hind legs. Nectar is carried in the honey stomach (sac). (2) We have never tried the experiment, so cannot say; but would strongly recommend you to stick to single colonies on each stand. There is no advantage to be gained by working stocks on this principle.

[8546] *Importing Bees from Canary Isles.*—I have a friend in the Canary Isles who is going to send me some queen bees. He describes the bees there as more yellow than my Italians. Are they Tunisian, or what variety? (1) Will the queens travel safely in Benton cages? The journey takes a week. (2) In a case of chilled brood does the larvæ ever go brown and sticky, like foul brood, as although the majority have dried up in my hive a few are in this condition? The rest of the larvæ in the hive, which did not get chilled, are quite healthy. Your answer will oblige in your next BEE JOURNAL.—T. O. B., Guernsey.

REPLY.—We would advise you not to import the queens. (1) They will travel in Benton cages made a little larger than usual. (2) The larvæ of chilled brood does not go brown as in foul brood. Chilled brood goes grey and then black. If the larvæ are brown and ropy it is evidently foul brood.

[8547] *Bees Refusing to Take Syrup.*—Will you oblige me by answering one or two questions in the JOURNAL? I have been giving my stock of bees food through all nine holes of a "Perfection" feeder for the last fortnight, but they take the syrup down very slowly, and on looking I find they have hardly any stores. Can you in any way account for this state of affairs, and will you advise me what to do? Shall I give them candy before putting them into winter quarters, and if so, what sized cake?—NOVICE, St. Asaph.

REPLY.—Examine the feeder to see that the holes are not blocked, and warm the syrup before putting it on again. Give a 1lb. cake of candy when wintering down, and examine this every three weeks, replenishing when consumed.

[8548] *Bees Deserting Hive.*—On examining my hives this week I was surprised to find one (which a week previously contained a very strong stock on ten frames) completely empty of both bees and honey; the combs being perfectly dry and clean, and practically no dead bees in the hive. Nothing wrong had been noticed with this hive, but I believe they have joined a neighbouring stock, as one hive seems to be exceptionally full. (1) Do you think this has happened, and what would be the cause of the bees leaving? (2) Would it be best to leave them as they are?—A. F.

REPLY.—(1) Bees will occasionally forsake their own hive and join another in the autumn, for two reasons, one being shortness of food, the other, when a weak colony is attacked by a strong one, instead of defending their home they will join the invaders, and help them to carry home the stores, afterwards living with them. (2) Let the bees alone.

Bee Show to Come.

November 5th and 6th, at Brighton.—Annual Show of the Sussex B.K.A., in connection with the Brighton, Hove and Sussex Horticultural Society's Chrysanthemum Show, to be held in the Dome and Corn Exchange, Brighton. Five open classes, including one section and one bottle. Seven Members' Classes. Schedule from C. A. Overton, Beecroft, Crawley. **Entries close October 29th.**

Notices to Correspondents.

APIARY (Isleworth).—*Westcliff as a Bee District.*—(1) Yes, we should say bees would do well there; and (2) no doubt you would find a suitable site for an outapiary within five miles.

NICHOL (Birchington).—*Moving Bees.*—It is best to move bees in cold weather, when they are dormant, as in November and December. Careful packing will be necessary even then to ensure their travelling such a long distance with safety.

Q. FERRY.—*Exhibiting Honey.*—The honey is granulating, and should be heated in water at about 160deg. Fahr. This will make it clear and bright again, and the honey will not deteriorate if the water is not allowed to become hotter than this.

UNA (Ayrshire).—*Improving Honey for Exhibiting.*—No. 1 honey is the better of the two, and no improvement can be made in it.

J. B. F. (Shipley).—*Making W.B.C. Hive.*—The dimensions of this hive are given fully in the "Bee-keepers' Practical Note Book," which fully describes how it should be made. The information you want has already appeared in our pages some years ago, and when the numbers became out of print the instructions were embodied in the "Note Book," as they were too long to reprint in the "B.B.J."

J. H. (Whitley Bay).—*Sugar for Bees.—Queen-mating.*—(1) The sugar is apparently unrefined cane. (2) Demerara sugar is not fit for bee food. (3) A queen-bee mates only once in her life, usually about five days after she emerges from the cell.

Suspected Disease.

R. M. (Cheadle), N. A. H. (Chartham Down), E. M. M. (St. Asaph).—The bees have "Isle of Wight" disease.

SUFFOLK (Leicester).—Both lots have "Isle of Wight" disease. Do not try to use the combs for other stocks. Thanks for your appreciation of our paper.

C. H. E. (King's Lynn).—It is evidently "Isle of Wight" disease. We have cured stocks with Ayles' cure, but you should carefully follow the instructions when using it.

Special Prepaid Advertisements.

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Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* **1d.** *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* **3s.** *per* ½*in., or* **5s.** *per inch.*

PRIVATE ADVERTISEMENTS.

LADY BEE-KEEPER seeks another to join her in working flower and fruit garden for profit; pretty part of Kent.—Address, MISS GERRARD, Elham, near Canterbury. v 89

FINEST CLOVER SECTIONS, twenty-two unglazed, in crate, 15s.—SMITH, decorator, Caistor. v 87

6 DOZEN SECTIONS, 1911 crop, second quality; what offers?—GARFITT, Llanerfyl, Welshpool. v 90

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WANTED, six dozen good Sections, highest price given.—J. YOUNGER, 21 Mackenzie-road, Cambridge. v 85

4 STRONG, healthy Stocks, all 1912 Queens, in good hives, 25s. each, bargain; also two empty Hives, £1; about forty drawn out shallow and twenty shallow, with foundation fixed, and twenty-five shallow and Standard Frames in flat, seven lifts, two smokers, three feeders, honey strainer, three excluders, four super clearers, box 120 W.B.C. ends, one skep (uncapping knife and scraper never been used), three veils, three supers, one extractor (Taylor), cost 35s. two years ago, £1 for this; the lot, including other odds and ends, £8 10s.—GEO. TURNER, Wood-lane, Bignall End, Newcastle, Staffs. v 86

GOOD medium colour English Honey, 28lb. tins, 58s. cwt.; sample, 2d.—W. H. STOPPARD, Tiptree. v 84

½ TON pure Cambridgeshire Honey, light amber colour, chiefly sainfoin, 50s. cwt.; 28lb. tins, 16s., on rail; sample, 2d.—J. CUNNINGHAM, Stetchworth, near Newmarket, Cambs. v 99

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FOR SALE, 3½cwt. good Honey, in 28lb. tins, 50s. cwt.—MORRIS, Cranham, Upminster. v 88

Editorial, Notices, &c.

REVIEWS.

The Humble Bee: Its Life History, and How to Domesticate It, by F. W. L. Sladen, F.E.S. (London: Macmillan and Co., Ltd., price 10s. net.) In this book the author, who is well known to our readers as a scientific bee-keeper, gives an account of the life history of the humble-bee, and how to domesticate it. Most people know the humble-bees, whose velvety coats and bright colours make them universal favourites. They are industrious insects, working with the same zeal as the honey bees, and never cease doing so until worn out. They may be seen on the wing from early morning until late on summer evenings. They possess long tongues, and are therefore of great value to the gardener, and more especially to the farmer, for they can fertilize the red clover, and reach the nectaries of other flowers inaccessible to the tongue of the honey-bee. All humble-bees that we see do not belong to the same genus, but are divided into two genera: *Bombus*, the true humble-bee, of which there are seventeen species in the British Isles, and in addition there are six species of *Psithyrus*, which are parasite humble-bees, *i.e.*, they prey upon their hosts, produce no workers, and each species of *Psithyrus* breeds only in the nest of its own particular species of *Bombus*. They are, therefore, called "inquilines" or "commensals," as they lodge and live at the expense of the Bombi.

The life history of both *Bombus* and *Psithyrus* are carefully described, and the illustrations show the gradual growth of the colony. After describing the various parasites and enemies found in humble-bees' nests, Mr. Sladen shows how nests can be found and taken—an enjoyment full of excitement and surprises; and how afterwards they can be transferred to suitable places in the garden where their working can be watched. Although humble-bees have stings, the risk of taking their nests is very small, and with ordinary care may be ignored. The author says that in 1911 he took nearly a hundred humble-bees' nests in all stages and did not receive a single sting. He has made many experiments in trying to domesticate humble-bees, and describes how he has succeeded in doing so. These bees cannot be kept in wooden hives like honey-bees, but are best re-established on the ground, and if a view of the comb is desired, it can be placed under a "Sladen" cover devised for this purpose. If a number of colonies are kept for observation, Mr. Sladen recommends a humble-bee house, and a suitable one is described and illustrated in Chapter VI. Queens may be attracted to occupy artificial domiciles, such as the one described and illustrated on page 29, "B.B.J.," for January 18th, 1912.

In this book we find set out the observations and practical work of the author, who has devoted more than twenty years to the careful study of this fascinating subject. We recollect when Mr. Sladen in 1892 printed a small treatise of forty pages on a stencil-copying apparatus, and with what pleasure we perused it. He was but sixteen years of age at that time, but in "The Humble Bee: Its Life History, and How to Domesticate It," the same title as the present work, he showed an acquaintance with the subject far beyond his years. It was through this that he was induced to take up bee-keeping, and, owing to his taking an appointment in Canada, bee-keepers in this country have lost an able and careful observer.

In this larger and more complete work Mr. Sladen gives a table of the British species of *Bombus* and *Psithyrus* (syn. *Apathus*), and describes how to distinguish them. The recognition of the species will be facilitated by the excellent plates showing all the bees life-size and in natural colours, photographed direct from nature by the author. From these it will be noticed how closely the parasite bees resemble their hosts. We can thoroughly recommend this book to our readers, who will, we are sure, derive much pleasure in studying it, and we hope it may be the means of giving them greater interest in these wild bees.

A Bee-hive Fungus: Pericystis Alvei, by Annie D. Betts, B.Sc. This is a reprint of a paper which has appeared in the Annals of Botany, Vol. XXVI., No. CIII., July, 1912. In it the authoress states that bee-hive fungi, as a class, have been studied but little, though bee-keepers have long been aware of the occurrence of "mould" in their hives. Miss Betts has given her attention to investigating these fungi with the object of filling this gap in our knowledge of the economy of the hive, more especially as some of the diseases are known to be of fungous origin. She finds *Pericystis alvei*—the name which she has given to this new genus and species—quite a common fungus, being the principal constituent of the "pollen mould" prevalent in hives during the winter and early spring. It grows on the pollen stored in the combs, and the contents of the cells attacked by it tend to dry up into hard plugs, which often split into layers, permeated with mycelium, most plentiful on the surface. The species may be distinguished from all others found in the hive by the character of its mycelium, which is here minutely described and illustrated. The spores are killed at high temperatures, as they do not germinate

between 78deg. and 100deg. Fahr., but will do so when transferred to from 59deg. to 64deg. in from one to five days. They germinate under outdoor conditions (mild winter weather) in about eleven days. This fungus is a normal inmate of the healthy bee-hive, and is not believed to be pathogenic, being present alike in healthy and diseased stocks.

Miss Betts further discusses the probable life history of this species, and points out that in spring the bees clean out their combs and throw out the plugs of mouldy pollen. Some spores will be left, and remain in the hive during the summer, so that when the stock swarms the bees of the swarm will carry some of the spores adhering to their bodies with them, and in this way transfer them to the new colony. The temperature of the bee-hive when the bees are active is from 89deg. to 93deg. Fahr., and were the spores to germinate in these circumstances the bees would remove the fungus from the combs as fast as it grew. The lower temperature in winter enables it to establish itself unmolested by the bees, which are clustering in the central part of the hive. We commend the authoress for the painstaking manner in which she has worked out and described the life history of this fungus.

THE DAIRY SHOW.

The Thirty-seventh Annual Exhibition of the British Dairy Farmers' Association opened on Oct. 8th at the Agricultural Hall, London, and will close on the 11th.

The honey and bee appliances make an attractive display, many well-known exhibitors being represented as well as several newcomers, whose exhibits compare very favourably with those of the more experienced hands.

Mr. E. Walker judged the exhibits and made the following awards:—

Twelve 1-*lb Jars of Light Extracted Honey.*—1st, J. Pearman, Penny Long Lane, Derby; 2nd, R. Allen, Tusmore, Oxon; 3rd, T. G. Hillier, Hurstbourne Tarrant; 4th, J. Ward, Hesketh Bank, Preston; r., A. G. Wiggins, Swinderby Road, Wembley; v.h.c., H. G. Ceiley, Muswell Hill, N., J. M. Stewart, Mollance, Castle Douglas, J. Lee & Son, 4, Martineau Road, Highbury, W. Bourne, Esher Village Hall, Esher; h.c., H. D. Copps, Ridge, nr. Barnet, F. W. Frusher, Swiss Apiary, Crowland, W. B. Allister, Throckenholt, Wisbech.

Twelve 1-*lb Jars of Medium-coloured Extracted Honey.*—1st, G. S. Jesson, Hose, Melton Mowbray; 2nd, G. W. Kirby, Priory Road, Knowle, Bristol; 3rd, T. Manfield, Hillside Lodge, Newark-on-Trent; 4th, T. Alun Jones, Halkyn, Flintshire; r. and v.h.c., F. W. Frusher; v.h.c., C .H. Rose, Blagden Road, New Malden.

Twelve 1-*lb. Jars of Dark Extracted Honey (including heather-blends).*—1st, G. H. and T. S. Elliot, Southwell, Notts; 2nd, Jas. Lee and Son.; r. and v.h.c., J. Pearman.

Twelve 1-*lb Jars of Heather Honey.*—1st, J. Pearman; r. and v.h.c., John Berry, Llanrwst; v.h.c., M. J. Lamboll, Chiddingfold, Surrey.

Twelve 1-*lb Jars of Granulated Honey.*—1st, R. Allen; 2nd, F. W. Frusher; v.h.c., Jas. Lee and Son; h.c., Jas. Pearman.

Twelve 1-*lb Sections.*—1st, J. Pearman; 2nd, Jas. Lee and Son; 3rd, H. D. Copps.

Six 1-*lb. Sections of Heather Honey.*—1st, W. Dixon, Central Road, Kirkgate, Leeds; r., J. G. Nicholson, The Apiary, Langwathby, Cumberland; v.h.c., J. M. Balmbra, Alnwick; c., Miss M. Unwin, Crosswater, Churt, Surrey.

Honey Trophy.—1st, J. Pearman; 2nd, Jas. Lee and Son; 3rd, A. G. Wiggins; r. and v.h.c., Mrs. Seadon, Bromley, Kent; v.h.c., C. P. Maynard, High Street, Guildford.

Beeswax.—1st, J. Pearman; 2nd, T. G. Hillier; 3rd, A. Hiscock, Loddington, Kettering; v.h.c., Percy Leigh, Stoke Prior, Bromsgrove; h.c., F. Harris, Sibsey, near Boston.

Beeswax.—1st, F. Harris; r. and v.h.c., Jas. Pearman; h.c., John Berry and F. W. Frusher.

Interesting Exhibit of a Scientific or Practical Nature.—1st, S. Blomfield and Co., 23, Bowling Green Lane, Clerkenwell.

ALTRINCHAM SHOW.

The Altrincham Agricultural Society held their fifty-first annual show on September 25th. The honey and wax exhibits were of excellent quality. The Rev. T. J. Evans, M.A., of Rock Ferry, and Mr. T. Johnson, of Taunton, acted as judges, and made the following awards:—

OPEN CLASSES.

Complete Frame-Hive.—3rd, Master G. F. Rowbotham, Altrincham.

Observatory Hive.—1st, F. C. Kelly, Sandycroft, Chester.

Twelve 1-*lb. Jars of Extracted Honey.*—1st, H. C. Barlow, Newcastle, Staffs.; 2nd, A. Hulse, Knutsford; 3rd, W. B. Allister, Wisbech; r., W. Dixon, Leeds; v.h.c., F. Clarke, Altrincham, and Mrs. E. Andrews, Fearnhead; h.c., A. S. Dell, Leigh, and A. Jennings, Nether Alderley; c., F. Newport, Tattenhall.

Display of Honey, &c. (Open).—1st, W. Dixon; 2nd, A. S. Dell; 3rd, H. Stubbs, Crewe.

LOCAL CLASSES.

Twelve 1-*lb. Sections.*—1st, W. Reece, Tarporley (silver medal, C.B.K.A.); 2nd, W. Bradburn, Bramhall; 3rd, J. Howarth, Altrincham.

Twelve 1-*lb. Jars of Extracted Honey.*—1st, A. Hulse (silver medal, C.B.K.A.); 2nd, W. Barlow, High Legh; 3rd, J. Hall, Broadheath; r., A. Spencer Hogg, Altrincham; v.h.c., J. Howarth; h.c., L. F. Robinson, Northenden, F. Davenport, Knutsford, and A. Jennings; c., H. Stubbs, and W. Kelly, Sandycroft, Chester.

Beeswax.—1st, A. Hulse; 2nd, H. Stubbs; 3rd, J. Bowdon, Barnton; r., W. Anderson, Acton Bridge; v.h.c., T. O. Skinner, Woodley; c., J. Elwell, Crewe.

Six 1-*lb. Sections.*—1st, W. Reece (bronze medal, C.B.K.A.); 2nd, N. E. Broughton, Wilmslow; 3rd, J. Howarth; r., W. Barlow.

Six 1-*lb. Jars of Extracted Honey.*—1st, A. Hulse (bronze medal, C.B.K.A.); 2nd, A. Jennings; 3rd, H. Stubbs; r., J. Howarth; v.h.c., J. Elwell, and A. E. Wright, Sandbach; c., S. Bayley, Wilmslow.

Six 1-*lb. Jars of Extracted Honey* (Dark).—1st, H. Brown, Bowdon; 2nd, E. Atkinson, High Legh; 3rd, S. Bayley; r., W. Barlow; v.h.c., A. Hulse.

Six 1-*lb. Sections.*—1st, W. Barlow; 2nd, A. Hulse; 3rd, H. E. Broughton.

The Rev. T. J. Evans, M.A., gave two lectures during the day to large and appreciative audiences.—E. W. Franklin, Hon. Sec., C.B.K.A.

THE W. B. CARR MEMORIAL FUND.

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HELPFUL HINTS FOR NOVICES.

By W. Herrod.

THE CARE OF APPLIANCES.

Not many years ago bee-keeping was looked upon as a hobby, and was attended to assiduously, or otherwise, according to the whim of the owner of the bees. At times, especially during the interesting period of the summer months, attention was paid to detail, and everything in the apiary and in connection therewith was kept spick-and-span and in order. In the winter months other hobbies took its place, with the result that frequently chaos reigned amongst the appliances, so that very often these became useless, and new ones had to be purchased with the rise of enthusiasm the following spring.

To-day, bee-keeping is a business, and an important one, in connection with agricultural and horticultural pursuits; therefore, if we are going to obtain the maximum of profit from it, attention must be paid to detail throughout the whole year.

Many appliances once purchased will last a lifetime if proper care is bestowed upon them, and in these hints I want to point out to the novice how this can be done, and at the same time quote cases of neglect and disaster which have come under my own observation.

Hives.—These are kept out of doors, therefore are exposed to influences that will deteriorate them more quickly than any other appliance in use. New hives should be purchased in the autumn or winter, for two reasons. First, the appliance manufacturers are less busy at these periods, therefore better workmanship is obtained than during the rush of the season. Secondly, the bee-keeper has more time, therefore he can pay proper attention to the treatment of the hives in view of their preservation. On arrival, the hives should be unpacked, and a thorough inspection made to see that no damage in transit has occurred; if small pieces have been knocked off, or joints sprung, these should be made good. When unpacking, remove the frame-work which has been nailed upon the bottom of the legs to brace them together. This, I find, is often left on in spite of the fact that it is usually made of rough, unplaned wood, which should indicate to the veriest novice that it is only a temporary arrangement. The hive should next be knotted with patent knotting, purchased from an oilman; twopennyworth will do many hives, or it can be made by dissolving shellac in spirit, or red lead and glue mixed together can be used. The mixture is painted over the knots in the wood. If this is not done, in the course of a few months the paint will peel off from the knots. As soon as the knotting applied has set, it should be smoothed down with sand-paper of a fine quality. Now proceed to give the hive its first coat of paint, which is called priming. This groundwork should be of a very durable nature, and is made by mixing red lead, white lead, and a small quantity of driers or terebene, with turpentine and a few drops of raw linseed oil; the turpentine will make this dry quickly. Care should be taken to put the paint on thin. The great fault with amateur painters is that they try how much paint they can get to stick, instead of rubbing it down with the brush as thinly as possible. Start with the floor-board, turning it upside down, coating the whole of the under-side as well as the legs; then turn it the right way up and paint the alighting-board, together with the next board to it. The outer edges should then receive attention, and a portion about an inch wide all round the top side should be painted; in fact, wherever two portions

of wood come in contact paint should be applied, so that moisture, which is bound to get in sometimes, cannot soak into the wood and rot it. Having completed the work take a final look round, to see there are no "fat edges," *i.e.*, paint left in quantity by the brush being rubbed across a sharp edge. These should be brushed off; if left, the paint will eventually peel off, leaving the wood bare, and they will also make the different parts of the hive fit badly.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

MORE SELF-HELP REQUIRED.

(Continued from page 396.)

[8567] A great safeguard is a young queen inserted every year: one that is reared in July, and added to the stock with, or without, a nucleus in August before feeding up for winter. Another thing is the application of unusual ventilation. In these two items are the essentials of immunity; and they need no great intelligence in application.

Mr. Stapleton showed how he cured his apiary, largely by ensuring more ventilation than is usually allowed; but at the same time it must be remarked that in increasing largely from the remnant of his stocks he was compelled to adopt the regenerative principle as embodied in the use of young queens. He may well be excused for considering that extra ventilation alone saved his apiary, as any sufferer may at once find for himself if he will remove all quilts from his affected stocks until quite cold weather comes in.

It is foolish of any bee-keeper who has failed, to say there is no cure for bee-paralysis, when there are a score of others who have succeeded in exterminating the disease.

In the spring of this year I heard from two bee-keeping friends, whose respective apiaries were separated only by the high road. One had been losing bees in hundreds, and two stocks had died out; while the other owner had no sign of the trouble, although the sick bees over the way had been lying about the garden and pathway for people to tread upon. The apparently immune apiary had every queen removed in August of the preceding year, a fact bearing out my position; but I hear of many similar cases. The above once diseased apiary is now perfectly healthy and the bees have increased considerably, the owner having since followed the road that leads to success.

The practically immune apiary is still free from trouble, but, according to our disconsolate friends who declare there is no cure, both of these apiaries should have been wiped out. Other reports show equally remarkable cures and increase, where the owners have followed commonsense methods.

For instance, a stock advancing from the first towards the second stage of the disease in May was swarmed on to a fresh set of combs, retaining their own queen for a time on the former site. The original combs were moved away, leaving only young bees thereon after a few days, with the exception of a score or two of older affected workers that were thrown out during the first week. This removed lot was allowed to rear its own queens, and by the time the cells were matured the hive was so populous that it again was divided into three, each being allowed one queen-cell.

The original stock continued to lose a few old bees until the young were hatching (a break of three weeks), when the population rapidly increased with no further sign of sickness. The queen of this lot has also been removed, and all four stocks, with young queens, are considered to be in superb condition, the stock and first swarm having stored over 100lb. These had slight medicinal treatment before and after the division.

Another report shows how a stock during the latter part of the season 1911 had advanced to the final stage of the disease, while the queen had also failed. Though but a year old she was producing mostly drones, and the bees appear to have reared another to supersede her; but, as sometimes happens, both remained in the hive until the owner thought it better to destroy the mother. A comb of healthy bees and brood was given to the stock, according to my directions, when they were fed up for winter with medicated food; and they had no further attention until the colony became so populous in the following May that it was divided, having had no more feeding or attention whatever, all being in prime condition.

I have no wish to deprecate the use of medicinal agents, but while an effective germicide is very necessary, I am most anxious to show that every bee-owner has it in his own power to raise the vitality of his stocks so that not a single one need succumb.

The conclusive experiences illustrated are duplicated in many similar satisfactory reports, the owners securing from two to four rousing, healthy stocks, instead of allowing the affected colony to go downhill in the all too usual helpless fashion.

I sincerely hope all the "Can't cures" will in future be turned into "I will, and can cures!"—SAMUEL SIMMINS, Heathfield, Sussex.

HONEY SEASON IN ABERDEENSHIRE.

[8568] The honey season now closed has been one of the poorest on record. The bright promises of success held out in spring were broken in May, when bad weather set in. The bee-keeper, month by month, looked for an improvement in the climatic conditions, but the long, almost unbroken spell of cold, bleak, sunless days and rough, high winds, with the almost continual rainfall, blasted his hopes, and, in many—too many—cases the season has been a failure. In many apiaries where bees were left in spring to forage for themselves colonies died out from starvation up to a time when, under normal conditions, surplus honey would have been stored; but where more enlightened methods were adopted and bees were fed and carefully stimulated, a fairly satisfactory season has to be recorded. The full effects of the poor season will not be experienced till next spring, when it is feared many colonies will be found to have died from hunger, unless the meagre supply of stores they have been able to accumulate be supplemented by feeding. The loss in yield has been partially made up to the bee-keeper by the increase in price, but in the case of heather honey the supply is quite inadequate to meet the demand. Well-finished heather sections are almost unprocurable. The heather was past its best bloom before the weather improved, and then, though the days were bright, early morning frosts had destroyed what honey remained to be gathered. For first grade clover sections little difficulty has been experienced in getting 12s. per doz.; second grade, 10s.; drained honey, 9s. to 10s. doz.; heather, 1d. per ounce.

The first natural swarms came off about June 16th. One was recorded in the beginning of May, but there is good reason for believing that it was a "hunger" swarm. Swarms, like honey, have been a poor crop. Some were abnormal in size, weighing up to 10lb. and over, from a standard ten-frame hive. A swarm of this weight, which issued 17th June, and was fed with half a stone of syrup, had filled and sealed two racks by 23rd July, and its record by the end of the season was seventy sections, a few pounds of drained honey, and sufficient winter stores. Even in a a good year this would be considered splendid, but, alas! such results have been the exception and not the rule.

What might be termed the clover honey-flow occurred from July 3rd to July 9th inclusive, when a few days of excessively warm weather were experienced, and sections were rapidly filled. It is difficult to give the average yield per hive for the district, but in fixing it at 20lb. we have a feeling rather of over-estimating than of under-estimating it.

"Isle of Wight" disease has made its appearance in the Valley of the Don, and it is feared that this disease, which has been devastating apiaries south of the Border, may be more widespread locally than has been recorded, and bee-keepers are looking forward with anxiety to spring in case the fell disease may have worked havoc in their apiaries during the dormant season.—J. A. J., Donside, Aberdeenshire.

A SUCCESSFUL EXPERIMENT WITH "CRAWLING SICKNESS."

[8569] I would not trespass on your valuable space, but this dread disease appears to me, and I think to all bee-keepers, to be a matter of vital importance, and any fresh knowledge will therefore be welcomed as perhaps bringing us a stage nearer to a solution.

First, let me say I am exceedingly fortunate in having a good brother bee-keeper, whose apiary is located some four miles away. I have been able to study the disease, and make experiments, otherwise I might never have tackled it until it tackled me. So far I have been free from the disease.

I will not bore your readers with the hundred-and-one experiments and just as many failures extending over the past summer (I had nearly written *winter*), each test being duly recorded, date, weather conditions, &c. The result being in every case—failure. In many instances my treatment killed the bees outright, in others they showed no signs of improvement whatever; it was simply a matter of trial and failure.

At last, however, I consider I am justified in using the heading to this letter, as the following experiments will show:—

I took an empty cigar-box, fitted-up with comb from a diseased stock, filled some of the cells with a prepared food by means of a fountain-pen filler, covered the top with perforated zinc, and placed 200 crawling bees therein, especially those having the small wings dislocated. These were confined for twelve hours in a temperature of 75deg.; they were then released, it being a sunny day. Imagine my delight when one bee, then another, fled up round a tall oak tree and back to the parent hive. Many seemed doubtful, "fanned" on the box, tested their wings first an inch, then a foot, and finally flew

off and away. There were six which could not fly as their wings were daubed with syrup, and these I killed.

There was no excretum in the box, although I noticed several voiding it when on the wing. An interesting point was that in all cases the wings were folded in their natural state again.

I am now conducting a series of experiments on diseased stocks, and will report later, if you will kindly allow me space. Please note, Mr. Editor, I do not claim to have found a cure, but I certainly think I am on the track of one. I repeated this experiment several times, and was successful each time. I find eight hours sufficient to cure the bees.

I regret to read of Mr. McDonald's sad loss. One seems to know the gentleman intimately through reading his delightfully-written articles. May I offer my sympathy?—ARTHUR H. WILKES.

EXPERIENCE WITH "ISLE OF WIGHT" DISEASE.

[8570] If you think this account of my experience with a stock of bees suffering from "Isle of Wight" disease of any interest to the readers of the "B.B.J." I hope you will insert it in your next issue.

On July 15th, 1912, I visited an apiary and found a swarm of black bees on five frames with "Isle of Wight" disease. The owner, on my informing him, decided to destroy them. I persuaded him to allow me to take them home, and transferred them to a frame-hive well painted with a solution of one of the cures advertised in the "B.B.J." (I will not mention the one I tried, or it may be called a free advertisement.) I watched this stock with great interest for days: to my disappointment I saw them die off at the rate of two to three hundred bees a day. This went on for a week, and I thought I should see the last of them; then the mortality suddenly stopped, and by degrees they pulled up with slow feeding, and now the stock is crowded on eight frames out of the ten, with four frames full of sealed brood, and no indication of the disease. I may say it is one of the strongest stocks in my district, with plenty of stores for winter. I will not go so far as to say that the solution I tried cured it; I will leave that for readers to judge for themselves, but any one wishing to see this stock may do so with pleasure.

I think this district has had more losses than any, as whole apiaries have been wiped out, some with fifty, sixty, and one hundred stocks; in fact, there are scarcely any bees left.—A. NICHOLLS, High Wycombe, Bucks.

SOUTH AFRICAN FERTILE-WORKER BEES AND PARTHENOGENESIS.

By D. S. Van Warmelo, Harmony, Pretoria.

In the May, 1912, issue of the *Agricultural Journal* of the Union of South Africa an article appears, under the heading "South African Fertile-Worker Bees," by G. W. Onions, disproving the generally accepted law of parthenogenesis in the honey-bee as signifying the production of drones and drones only. The writer apparently knows what he is about, and his observations must be regarded as correct; the article gives evidence of an intimate knowledge of modern bee-culture and bee-literature, as well as much experience gained through a genuine desire to verify by personal observation all theories regarding bee-life. The contention is that the South African fertile-worker bee produces, as a rule, worker-bees, and that drones are the exception. This is so contrary to all scientific knowledge regarding the honey-bee of other countries that at first sight, on reading the article in question, one feels constrained to discount its statements, on the following grounds:—

(1) In almost every respect the South African honey-bee differs very little from the ordinary bees of other countries, and it is therefore highly improbable that there should be such a great deviation as to confound all science relative to the law of parthenogenesis in the honey-bee.

(2) Mr. Onions appears to test whether his African queens are virgins or not from the progeny they produce, and, therefore, accepts the law of parthenogenesis with regard to the African *queen*. Considering the anatomical internal structure of the queen, it would seem contrary to all laws of nature that the African *worker-bee* should produce her progeny in a wholly different manner from the queen, which is essentially a worker-bee with fully developed reproductive organs. With the queen-bee it is an established fact that all worker-producing eggs receive the male sperm in their passage down along the oviduct by contact with a gland attached to the spermatheca. Most scientists seem to agree that the queen has control of this gland, and that fertilisation is, therefore, a voluntary act on the part of the queen, *i.e.*, she produces either drones or workers at will. Without impregnation it must then be impossible for a worker-bee, an undeveloped female, to accomplish what even a fully developed female, a queen, is unable to do.

The above arguments are of a mere speculative nature, and their principal object is to serve as a warning against the acceptance of a theory encroaching

upon the fundamental law of nature regarding the honey-bee: that there can be no female propagation without fertilisation. There are in South Africa two distinct races of bees, the yellow and the black bee. From Mr. Onions' article I gather that he used the yellow bee in his experiments. I have myself reared many Italian queens in Pretoria, and although I have met with some of the same difficulties with which Mr. Onions appears to have been confronted I have never experienced anything similar to what he states about African fertile-worker bees. My African bees were all of the yellow strain. It may have been due to my locality, or to want of observation, or otherwise to my strain of bees, but with me fertile-workers have never been so persistent as has been the case with Mr. Onions; and in a fertile-worker colony or nucleus I have never seen anything but *drone*-cappings. At the same time, however, I must admit that I have never given fertile-workers full play, but have always strenuously endeavoured to get rid of these pests of the African apiary. Incidentally, I should like to recommend my own method in this connexion as being the safest I have yet read or heard of. Mr. Onions complains, like so many others, of the difficulty of introducing queens to a fertile-worker colony; let him try the following method, and I guarantee he will seldom, if ever, lose a queen even when introducing her into an African fertile-worker colony. Make a swarm of the colony by shaking all the bees out in front of an empty skep on the old stand. Leave them clustered in the skep for a few hours, again throw them out in front of the skep and let the queen to be introduced run along with them into a hive fixed with foundation-comb. This method can seldom fail. The chief point is this, that the bees must feel themselves a swarm, in which condition they will not refuse admission to a strange queen, swarms—especially after-swarms—often being accompanied by several queens. As soon as this swarm-made colony has established itself on its new comb, the best of the queens and pseudo-queens will be put on the throne, in this case undoubtedly the fully developed queen. In connexion with this I may also state that the reason why the moving of the fertile-worker colony to a new stand and introducing the queen on the old stand often proves a failure is because some of the fertile-workers are apt to find their way back to the old stand, where they are still acknowledged by the returning bees as the reigning queens and as such accepted.

But, to return to the subject in hand. Speculative arguments against Mr. Onions' theory are not conclusive evidence. We require more substantial facts for the refutation of his theory; and in the absence of more widely conducted experiment we can do nothing but simply point out the incorrect conclusions—if there be such—drawn by the writer himself in his own article. Mr. Onions, being a practical bee-keeper, and one who appears to be well acquainted with bee-keeping and bees, we are bound to accept his observations as being correct. But I shall endeavour to prove, in a few words, that the conclusions he forms are not convincing proof to us that his theory is correct. I contend that, if it be true that the African worker-bee is capable of producing worker-bees, she must have been impregnated by a drone, perhaps a diminutive drone, in which case the law of parthenogenesis in African bees still holds good, for then she is no longer a fertile worker-bee, but a partly developed queen.

This is a fact Mr. Onions seems to have overlooked, for we find no reference made to this point in his article, with the result that his deductions appear to be incorrect, for the following reasons:—

(1) On page 721 an "instance is given of the assiduity" of the African fertile-worker bee when one of these pests had found its way into a golden Italian hive. According to the writer, on the third day after the removal of the Italian queen this fertile worker was observed to be treated by the bees as a queen. Now, this points to the probability of the worker-bee having, as a pseudo-queen, flown out of her own hive *in order to meet the drone*, and having landed in the wrong hive, it being very unlikely that a fertile worker-bee should ever leave a hive for any other purpose.

(2) On page 728, Mr. Onions states that he has, by constant practice, acquired ease in detecting fertile-workers by other signs besides the act of ovipositing. It is a fact well known to bee-keepers that laying-workers are distinguishable from ordinary worker-bees. Now, it would appear that some of them may have developed the latent qualities of the queen to such an extent that they are in the true sense of the word simply diminutive queens. This change may have been brought about by the worker-bee having hatched from a rather large cell, or by her having, somehow or other, received royal jelly in her first stages of development, or perhaps by having been chosen by the bees as an intended queen in a rather advanced stage of her larval existence.

(3) The deduction on page 722 of Mr. Onions' article that "African workers' eggs, then, not only do not invariably hatch drones, but, broadly speaking, it may be said of them that they do not produce drones," is no logical conclusion

with regard to the theory that the law of parthenogenesis does not apply to the African worker-bee, but rather strengthens my argument that a fertile-worker which produces worker-bees has been impregnated by a drone. For Mr. Onions has conducted his experiments in nuclei, whereas every bee-keeper knows that a young queen generally does not produce drones in a very weak nucleus, their presence not being needed where there is no desire of swarming or superseding.

(4) Our speculative arguments we bring to bear on our more convincing proofs. It follows from the last-mentioned point, taken in connection with point 2, that a fertile worker, being, as I contend, an undeveloped queen, cannot continue laying worker-producing eggs for a considerable length of time, and is not long-lived; she is consequently bound to produce drones as soon as the spermatozoa in her spermatheca lose their vital strength. Well, this Mr. Onions states to be actually the case, on page 724, where he says "*The falling off of laying-worker fertility is accompanied by a few diminutive males.*"

(5) Again, it follows from my last point that a laying-worker colony will naturally very often continue attempts at superseding, because the bees feel that the strength of the impregnated worker-bee, or worker-bees, is failing. This appears to have repeatedly been the case in Mr. Onions' experiments, even though these bees continued killing their hatching queens through the presence, presumably, of the reigning laying-workers, whether these were impregnated or not. The queen-cells that are built so persistently in such cases I would call supersedure cells.

These are my principal arguments against Mr. Onions' theory, and in the light of his discovery it is apparent that probably there is no such thing as the purloining of eggs by eggless and larvaless colonies, and that, in the bees of other countries, occasionally—perhaps frequently—fertile-worker bees also become impregnated and are therefore enabled to raise queens for the propagation of the species. This may then be a form of atavism, becoming less frequent in the higher order of insect life.

The article in question by Mr. Onions will probably lead to further experiments for the elucidation of the subject, also in other countries, where much in connexion with so-called fertile-workers still remains a mystery.

Queries and Replies.

[8549] *Parthenogenesis.*—(1) In the "British Bee-keepers' Guide Book" (eighteenth edition, page 11), it is stated, "if a queen from any cause fails to become fertilized, she will only lay drone eggs." In the lower forms of life we find instances where reproduction of species takes place without fertilization, but in the more highly organised insects I am not aware of any other instance where an unfertilized female can lay an egg which can hatch out into a living insect. It seems almost incredible that a drone—the source of fertility—should himself be in this case the product of an unfertile queen. Are drones, the produce of an unfertile queen, also unfertile? Is it possible that drone eggs found in a hive with an unfertile queen are the work of a fertile worker? I should welcome a little light thrown on this point if you have space to spare. (2) I had the privilege of assisting lately in the operation of driving bees from a frame-hive with very old combs into a new frame-hive with wired foundation. Before commencing, I had searched in vain for guidance in your "Guide," which makes no mention of such an operation, but confines its remarks to straw skeps. We adopted a somewhat similar plan, and found it worked perfectly well. Probably a paragraph on this operation added to the chapter on "Driving" might help other novices in a similar predicament. With kindest regards and warm thanks for the services you have rendered to amateur bee-keepers by the publication of the "Guide."—J. A. J., Aberdeen.

Reply.—(1) However incredible it may seem, the statement to which you allude is perfectly correct. Parthenogenesis in bees, or the reproduction by ovulation yet without the immediate stimulus of the male principle is well established. It was propounded by Dzierzon in 1845, and subsequently confirmed by a series of experiments, microscopic observations, and a most searching investigation by Siebold, Leuckart, and Berlepsch. You would do well to read "The Honey Bee," by T. W. Cowan, and you will there find the question gone into very thoroughly on pages 143 to 152. Also on page 138 you will find it stated that in an unimpregnated queen the spermatheca contains no traces of spermatozoa, although her eggs are capable of producing drones. When a fertile queen has exhausted all her spermatozoa, she may still continue to lay, but only drones are produced. Parthenogenesis is not confined to bees, but is found in other insects, such as aphides, silk moths, saw flies, gall wasps, aquatic crustaceans, and many others. In this connexion you could read "On True Parthenogenesis," by Dr. von Siebold, and "The Evolution of Sex," by Geddes and Thomson. (2) Driving is not recommended with moveable combs, for the simple reason that it is infinitely less

trouble to shake the bees off the combs than to drive them, and the operation is very much more quickly performed.

[8550] *Advanced Bee Books.*—Rather more than a year since I attended a course of instruction in bee-keeping at Bradford-on-Avon, at the close of which you, no doubt unintentionally, made me feel how little I knew about the subject. My apiary at that time consisted of one stock in a skep. I now have ten stocks and three hives of driven bees (three lots to each hive), all in W.B.C. hives, which I made myself; and every stock is in good condition for wintering.

As I am anxious to increase my knowledge of the craft, I shall esteem it a favour if you will (1) recommend a book that goes rather more deeply into the subject than the "Guide Book"; (2) let me know if there is a publication giving the working drawings of the solar wax extractor (3) say if your "Notes for Novices" in "B.B.J." are likely to be published in book form.—P. C. D., Chippenham.

Reply.—(1) You might read Cowan's "The Honey Bee" and Cheshire's "Scientific Bee-keeping." (2) We do not know of one. (3) We have had so many similar requests with regard to these articles that we are considering the matter.

[8551] *Queen "Balled" Through Manipulation.*—I bought a swarm in July from a neighbour who has ten colonies. Yesterday (Oct. 3rd) we made a general examination of all the stocks, finishing with mine, which is about 20yds. from the others. My bees seemed very nervous all day after the inspection, and this afternoon I picked up a dead queen near the hive. I am sure it was not there this morning, and the bees seem to be working all right to-day, carrying in pollen. I am at a loss to know whether it belonged to my colony or to my neighbour, as a strong stock of his had robbed a weak one, and we thought it might have been the queen of that hive carried and dropped, as they generally fly over my hive. I am sending the queen to you for inspection, if you will kindly let me know whether it is a young or old one, and what you think caused its death.—J. E. D., Llanberis.

Reply.—The queen is a fertile one of last year. The cause of death is "balling" through manipulation.

[8552] *Queen Not Laying. Wintering Bees in a Greenhouse.*—I had occasion to rear a queen about a month ago, and I am at a loss to know whether she has been fertilized or not, as she has not up to the present begun to lay, in spite of my supplying a bottle of syrup. (1) Have you ever known a queen not to lay in the year in which she was bred? (2) Do you think an unwarmed greenhouse would be better than the open air for wintering four stocks of bees—I mean with the entrance facing the boards and the former darkened so as to admit very little light?—E. H., Knutsford.

Reply.—(1) In the summer-time queens will lay in due course whether fertilized or not. In our opinion your queen was reared too late for fertilization; next spring you will find she is a drone-breeder. Breeding ceased in the majority of colonies very early this year. (2) No. Bees winter best out of doors.

[8553] *Preparing for Winter.*—(1) What can I cover hives with to make them watertight? (2) Will 4lb. of soft candy be enough on each stock for winter? I have fed my bees all through the summer because they were put into W.B.C. hives without any stores; I am still feeding with rapid feeder. I am a novice, and gather my information from your valuable paper. I have used Naphthol Beta all the time, and intend medicating the candy. Is this right? (3) What is the best book for beginners on bee-keeping?—A. W. G., Canterbury.

Reply.—(1) Cover the roofs with calico, and then paint. (2) You can put on this amount when packing-down, then make a periodical inspection, and if the candy is exhausted give them more. When each stock has 30lb. of sealed stores stop feeding with syrup. (3) The "British Bee-keepers' Guide-Book," by T. W. Cowan. See advertisement on front page of this journal.

BEE DISEASE.

A paper contributed to the Zoological Section of the British Association at Dundee by Dr. H. B. Fantham and Dr. Annie Porter, on the "Isle of Wight" disease of bees, stated that the cause of the disease was discovered by the authors in 1906 to be a minute microsporidian parasite. *Nosema apis*—a parasite of the alimentary tract. The symptoms varied. Inability to fly, crawling, dislocation of the wings, abdominal distension, and dry dysentery, followed by early death, were to be noted. Warm, bright weather favoured the bee; wet and damp aided the parasite. *Nosema apis* had been proved fatal by feeding live bees, mason bees, and wasps on honey containing nosema spores; some honey being artificially infected, other sets being naturally infected by faeces of former victims, by uniting healthy and infected bees, and by housing healthy bees in cases in which infected stock had travelled.

Preventive measures seemed of most value in treating the disease. The only certain destructive agent for nosema spores was fire.

All dead bees should be burned. Old comb, and hives untreated by a painter's lamp after disease were to be avoided. Weak stocks should not be united, and great care should be exercised in importing bees, whether from other places in the British Isles or from abroad.

The provision of abundant honey and a pure water supply, together with scrupulous cleanliness of the hive and its surroundings, were great aids in the prevention of miscrosporidiosis.

Professor Minchin said that the parasite of bee disease was very similar to the one that infected the silkworms in France, known as pebrine.

The difference seemed to be that bee disease could be transmitted through the egg. Bees, he said, actually hibernate, whereas the silkworms turn into moths, and in the autumn the moth lays eggs.

This is the only connexion between the dying bee and the silkworm that emerges from the egg; yet the disease reappears. He believed that this was a case of hereditary infection.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

September, 1912.

Rainfall, 2·64 in.
Above average ·54 in.
Heaviest fall, 1·43 on 29th.
Rain fell on 6 days.
Sunshine, 148·2 hrs.
Below aver., 28·9 hrs.
Brightest day, 21st, 10·2 hours.
Sunless days, 2.
Maximum temperature, 65 on 4th and 8th.
Minimum temperature, 38 on 25th.
Minimum on grass, 32 on 25th.
Frosty nights, 0.
Mean maximum, 58·9.
Mean minimum, 46·4.
Mean temperature, 52·6.
Below average, 3·4.
Maximum barometer, 30·430 on 13th.
Minimum barometer, 29·342 on 30th.

L. B. Birkett

Notices to Correspondents.

R. J. (Hants).—*Name of Insect.*—The envelope in which you enclosed your letter and specimen had burst open in the post, and the insect was missing. H. M. C. (Isleworth).—You are quite right. The insect is a queen wasp.

NOVICE (Malden).—*Queries about Queens.*—(1) You evidently missed the queen among the crowd of bees. (2) Queens have generally ceased to lay at this time of the year. (3) As the bees settled down quietly after your examination was finished we should say all is right. (4) The queen does not feed herself. She is fed by the workers on predigested food, called chyle food. (5) Do not pack up the space between the inner walls of your W.B.C. hive. Leave it as it is.

INQUIRER (Ayrshire).—*Thick Syrup.*—As the bees have taken it down, you can assume that it will be all right. It will not crystallise if properly boiled, and it is better to be rather thick when fed so late in the year.

F. A. F. J. (Warmsworth).—The pollen has been gathered from the hollyhock, hence its colour.

Honey Samples.

W. H. F. (Leicester).—Sample No. 1 is good in density and colour, but aroma and flavour are poor. No. 2 is of fair flavour and aroma, colour good, density poor. The sugar you send is not fit for feeding bees.

M. J. S. (Scarborough).—The sharp taste in your honey you refer to is caused by its being gathered from sea lavender.

J. H. W. (Hurstpierpoint).—No. 1 is from clover; No. 2 from mixed sources, ragwort predominating; sample No. 3 was smashed in post and the honey had leaked out.

M. A. W. (Gravesend).—A very good honey from mixed sources, chiefly sainfoin. It is worth 10d. per lb. retail.

Suspected Disease.

NOVICE (Ayr).—The comb is affected with foul brood. You can cure this by using "Apicure."

J. H. L. (Glamorgan).—We do not find any sign of disease in the comb sent.

A. L. M. (Upper Clapton).—The comb contains chilled brood, which has partially dried up and then become mildewed.

E. M. M. (St. Asaph) and R. W. T. (Pwllheli).—The bees are suffering from "Isle of Wight" disease.

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PRIVATE ADVERTISEMENTS.

FERTILE 1912 English Queens, as supplied for many years to Mr. Sladen, 3s. each.—WITHYCOMBE, Docks, Bridgwater. v 10

FOR SALE, Extracted Honey, in 14lb. tins, 60s. per cwt.; sample, 2d. — ARTHUR ADCOCK, Meldreth, Cambs. v 9

HONEY, first quality Sections, 8s. 6d. dozen, cash with order.—R. COUSINS, The Rosary, Misterton, Gainsborough. v 3

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at the Zoological Gardens, Regent's Park, London, N.W., on Thursday, October 10th, 1912. Mr. T. W. Cowan presided, and there were also present General Sir Stanley Edwardes, Sir Ernest Spencer, Colonel H. J. O. Walker, Messrs. C. L. M. Eales, O. R. Frankenstein, J. Smallwood, T. Bevan, A. G. Pugh, E. Watson, Association Delegates G. Hayes (Notts), W. W. Falkner (Leicester), J. Price (Cumberland), J. Tinsley (Staffs), G. W. Judge (Crayford), A. Willmott (Hertford and Ware), G. R. Alder (Essex), G. J. Flashman (Barnet), E. F. Dant (Cambridge Mammoth Show), and the Secretary, W. Herrod.

The minutes of the previous meeting, held on September 19th, were read and confirmed.

Letters expressing regret at inability to attend were read from Miss Gayton, Messrs. W. F. Reid, J. B. Lamb, E. Walker, R. Giles, R. T. Andrews, H. Jonas, Tickner Edwardes, Dr. T. S. Elliot, and Capt. F. Sitwell.

The following new members were elected: Mrs. H. Judge, Mrs. U. Stanton, Miss M. Owen, Miss E. H. Owen, Miss A. W. Gerrard, Mr. J. Gibson, Mr. J. N. Brooks, Mr. A. Watkins, Mr. E. G. Burtt, Mr. J. H. Swanton, Mr. E. M. Rocke, and Mr. W. Hugh.

The report of the Finance Committee was presented by Mr. Smallwood. The payments into the bank for September amounted to £14 16s. 9d. The balance at the bank at the end of September was £165 1s. 4d.

Reports on Third Class Examinations, held at Aberdeen and Nottingham, were presented, and it was resolved to grant certificates to Mrs. A. Greig, Messrs. W. Moir, A. Duncan, J. R. Craik, A. Hutcheon, J. W. Moir, A. Riley, J. North, H. M. Lowe, and J. T. Duckmanton.

Next meeting of Council November 21st, at 23, Bedford Street, Strand, London, W.C.

After the meeting, a conversazione was held, a report of which will appear in our next issue.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of September, 1912, was £778.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

AMONG THE BEES.

THE PAST SEASON.

By D. M. Macdonald, Banff.

While such variations of temperature and mutable weather conditions as have been experienced in the bee season just passed have prevailed, bee-keepers were creatures of moods and tenses. At one time their hopes were up at blood heat, at another time they went down to zero —or below it! The honey early in the season rolled in as if bees were gathering it from even "fence posts." Then came an anxious time of suspense when, alternately, there was one good day followed by two or three bad ones. Later, there followed one dull, monotonous succession of wet and cold days, during which not even the most adventurous bee could venture abroad; this being followed by floods and a winter temperature. Some very fine honey was secured, but at other times even strong colonies were living from hand to mouth during the height of the season. All through August the rains descended and the floods came, resulting in washed-out heather. Clover yielded poorly on the whole, limes gave very little surplus, and heather samples in purity will be almost a blank. An order for five dozen pure heather sections had to be declined, because although the whole parish was searched such could not be collected. In late July no less than nine hives had to be gone over in an apiary of twenty to secure three dozen clover sections. Frame-hives and skeps examined by candidates in late September showed a powerful force of bees, but in some cases not an ounce of stored and sealed honey! Feeding would pay handsomely.

Baits.—Differences of opinion exist as to whether bait sections placed in the first rack of the season to tempt the bees aloft prove the full success some would attribute to them. Many hold that they themselves turn out poor specimens. In general every user holds that they do act as "baits," and induce the bees to ascend and start work earlier in the newly given super. *Where* they should be placed is the point on which there is most divergence. Personally, if I had only one section for each rack I would place it as nearly in the centre as possible; with two, I would insert them in the centre of each outside row; and with four on hand I would place them in each of the four corners. The one placed in the centre acts as a rallying point for all bees who find their way upstairs, and once aware there is accommodation for their stores they proceed to utilise it. Other bees follow the example and work outward as more ample supplies come from the fields or the force of bees strengthen—just what we desire, and I am not certain but that in

certain circumstances this one is as great an incentive to work aloft as two or four. With a good flow and a strong force of bees there is no doubt, however, that a greater inducement is offered by the two or four being placed as far apart as possible, because then the storing and consequent comb-building proceeds over a larger area. Baits judiciously used are a check to swarming. Bees, being taught to build and store, have their thoughts carried on in the right channel and the fever is not generated

Raising Queen-cells.—Recently a new plan has been experimented on whereby a large number of queen-cells can be quickly and easily procured without the care and labour required on almost all plans hitherto applied in extensive queen-rearing. This newest invention has the credit of being easily carried out by the merest novice, and several experimenters are quite enthusiastic over its success. With it there is no transferring of larvæ or hunting up for those just in the right condition of progress from the egg, which has been a hardship for the busy man or those whose eyesight is not so good as it was once. The *modus operandi* is briefly as follows:—Naturally one would select the very best queen in the apiary to breed from. Select a nice clean comb, fresh and not long in use, and insert it temporarily in the centre of the hive headed by this *best* queen, where it may be left for four or five days, after which it will be found full of eggs and hatching larvæ, if matters have gone on favourably. This comb is cleared of bees, and then it is placed flat on a bench or table. Begin at the top bar, destroying two rows of cells, clearing this space down to the mid-rib. Leave one row of cells, and destroy another two below, following out this process as far down as you have eggs, or until you think a sufficient number of queen-cells can be formed for your purpose. Now proceed, row after row, to destroy two cells, leaving one, and then repeat this right along to the other side bar, thus leaving an egg in every uninjured cell with ample room between to form space for a queen-cell.

This prepared frame is now given to a stock which had some time previously been made queenless, and therefore is in a suitable frame of mind to construct queen-cells. To insure that the eggs or larvæ from your best queen shall be chosen it is necessary to make the colony either broodless or that all brood-cells are sealed. The favourite spot for the prepared frame is lying flat horizontally on the top bars of the dequeened hive, resting it on a narrow rim about 2½in. deep to afford space for the convenient construction of the cells. Wrap this up nice and warm to conserve the heat of the brood-chamber. In ten days the now ripe queen-cells may be cut out to be given to nuclei. From fifty to one hundred cells have been secured on the face of one comb by several experimenters, but fewer than even the smaller number would be required in this country, as a rule; and naturally, I think these would be better cared for by the bees than a very large number. The process has been successfully carried out in Canada, the States, and New Zealand. During the coming season I hope that experiments will be made at home to test its efficacy.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

(*Continued from page* 364.)

No. 21. Lucerne (*Medicago sativa.*)

Nat. Order. *Leguminosæ.*

As a forage plant, this is highly esteemed. It will usually yield from three to five cuttings during the season, and in the United States, where it is better known by the name of "Alfalfa," it is stated that six and seven cuttings have actually been obtained in favourable circumstances. It is also a valuable fertilizer of the soil. The wheat-grower, by sowing with his wheat a few pounds of seed per acre, may depend in ordinary seasons not only upon having green feed for his cattle after he has harvested his grain, but also when the time comes to plough the ground again the nitrogen transferred from the atmosphere to the soil by this plant will add considerably to the fertility of the soil for future crops.

Belonging as it does to the clover family, it will readily be understood that it is a good nectar-producing plant, and it ranks in this respect equally with white clover. Unfortunately for the bee-keeper (especially in this country), it is very rarely allowed to seed, but is cut just as it gets well into bloom, for at that period it makes the best feeding material for stock. When, however, it is allowed to bloom freely, it yields a honey good in both colour and consistency as well as flavour, which, moreover, is slightly pungent.

The individual flowers are like the clover or pea-flower, arranged in short, thick racemes, terminating somewhat abruptly and opening from the bottom upwards. They are borne on a branching stem, with from five to seven racemes on each main stalk, and are light-blue or purple in colour.

The plant is a perennial, the roots growing down very deeply into the ground, and for this reason it is better able to withstand a drought. It will grow in shallow soil, but the roots penetrate even the hard

strata underneath, and in this way break up the ground, making it more useful for following crops.

It is of rank growth and more like a strong, shrubby weed. The leaves are small, and more elongated than those of white clover, and closely resemble those of sweet clover (*Melilotus officinalis*).

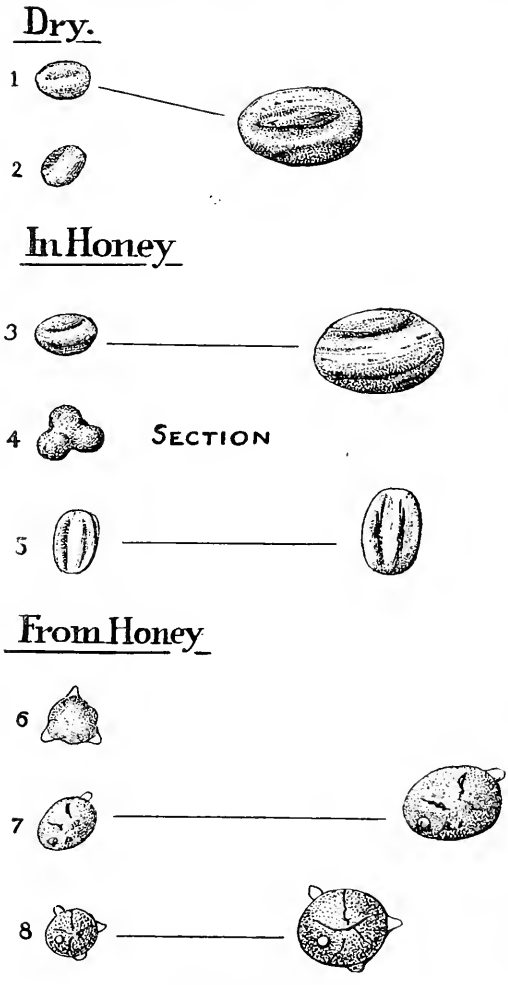
The generic name is one given to a number of clover-like plants, as, for instance, black medeok (*Medicago lupulina*), whilst the specific title '*sativa*' indicates that it is a cultivated plant, and therefore of some useful purpose.

The pollen is light yellow in colour, more circular in outline than is usual, and measures $\frac{1\frac{1}{2}}{1000}$ by $\frac{1}{1000}$ of an inch. It has three wide grooves running along three-fourths of its length when dry, as seen at Figs. Nos. 1 and 2 with enlargement.

No change occurs when it is placed in honey, and the grains appear as shown at Figs. 3, 4, and 5, which are just the same form but more transparent. Fig. 4 is a pollen grain end way up, seen from above.

When extracted from honey they are sometimes found triangular in form, as shown at Fig. 6, and which I believe is the transition stage into the more settled form as seen at Figs. 7 and 8, these being found in greater numbers. They measure from $\frac{1\frac{1}{4}}{1000}$ to $\frac{1\frac{1}{2}}{1000}$ of an inch in diameter, and, as will be seen, have numerous processes.

(*To be continued.*)



POLLEN OF LUCERNE.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

HEATHER HONEY FOR BEES.

[8571] I have examined my out-apiary at the moors. The hives are full of heather honey, all of it gathered since the 13th September. My heather *surplus* is 10lb. from seven hives. On the 13th September the brood combs were all but empty of brood or honey, and, of course, this splendid flow has been stored nearly all in the brood combs, and, alas! will be eaten by the bees in the winter. My regrets are not for the bees, as the honey is well sealed, and they will thrive on it, as they have always done in my long experience. There will be losses though, as there are very few young bees, and the stocks are not as strong as usual. But where does the bee-keeper come in, and the consumer of heather honey, who is prepared to pay a stiff price for it? The irony of this question of "Do bees winter well on heather honey?" is that the bee-keepers have no choice in the matter. It would be more to the point if someone would tell us how to get such a late flow stored in the supers. Not that it is a burning question, as there is something

quite solid in the annual satisfaction of moorland bee-keepers when the "bottoms" are well stored with the golden honey. It has hardly dawned on the bee men that it is costly to winter bees on honey worth 1s. 6d. (and this season 2s. 6d.) per lb.—J. N. K., Stocksfield-on-Tyne.

"AN ENGLISH BEE-KEEPER IN NEW ZEALAND."

[8572] The above is the heading of a letter from W. Ringer, Auckland, in your issue of July 11th last (page 276). As it stands, without qualification, the letter is misleading, and shows the folly of a person writing on a subject when he can have but a very superficial and limited knowledge of the matter.

In the first place, Mr. Ringer, whom I know, has his bees located on a peninsula, half or two-thirds surrounded by water, where it is impossible to keep bees alive without feeding them a greater part of the year. It is, therefore, not surprising that his bees needed so much food this past season, which was the worst over the whole Dominion I have known for twenty years; and he will find even in good seasons he will have to feed for winter stores while his bees are in their present location.

In the next place, regarding section honey, Mr. Ringer quotes wholesale prices, ranging from 2s. 9d. to 4s. per doz. Now, most of the section honey raised in New Zealand is produced north of Auckland, where the honey is of second-grade table quality, and is too dense to extract. All bee-keepers in that part of the Dominion are practically compelled to raise section honey, which, being too frail to travel long distances without getting smashed, all finds its way to Auckland, and that market is frequently glutted with section honey; hence it brings a low price. Mr. Ringer will be surprised when told that I have known sections to be selling wholesale in Dunedin at 9s. 6d. per doz., and not very long ago. When travelling there, I never knew it to sell below 7s. 6d. per doz., wholesale. Several large trial shipments were sent from Auckland, packed in the best manner possible, but they arrived in such a terrible condition that the returns did not pay freight.

Mr. Ringer evidently suggests a doubt about getting a return of £1 profit per colony. In my bulletin I have stated that "from a well-conducted apiary, in an average good district, the net profits per colony should reach from 17s. to £1 per annum, through a number of successive seasons, and this estimate I consider well within the mark," and so it is. I have a letter before me from a gentleman (who keeps a few colonies as a hobby), of which the following is an extract:—"The average yield of honey spring count for the season 1909-10 was 120lb., and for 1911-12, 265lb. per colony. I am only a novice, and attribute my success chiefly to the good queens received from the Government apiary." They were Italian queens. This gentleman's return in the latter season from thirteen colonies in clover honey and bees sold was valued by himself at over £90. This would seem to show that my estimate is not an exaggeration.

With regard to box-hives being used, there are sure to be a few break the law now and again, hence the need of inspectors in all cases where restrictive legislation is concerned, but these law-breakers are very few.—I. Hopkins, Auckland.

AN EIGHT STORIED HIVE.

[8573] I am sending a photograph of my tiered hive, which was built up by one queen without any assistance other than uncapping of stores in spring and brood-spreading in April. The six supers on the hive (all having glass windows) will be seen to consist of five shallow frame-boxes and one of standard frames, containing in all sixty combs, which were filled and sealed over and yielded 187lb. of extracted honey. The brood-nest contains ten standard combs, and under this I have another brood-box with ten standard frames fitted with starters of foundation after Simmins' plan to check swarming, which it successfully did. The hive, with outer covers and roof on, was quite 7ft. high from the ground, and the trouble was to get the heavy supers off the top. However, the kitchen-table formed a convenient platform at the back of the hive, enabling me to remove them without much trouble. I extracted the last box of combs on August 1, and returned them to the bees before going for my holiday, more with the idea of giving room to the bees than in the expectation of more surplus. You may judge of my surprise, on returning, to find this box nearly full and sealed over. I got 21lb. of extracted honey from this last super, bringing the yield from the hive up to 208lb. (not bad for a London suburb!). Another stock also did very well, giving me 172lb. of extracted honey. I took off the first super on April 17, and the bees started work in a second on April 27. This stock would, I think, have given a larger return than the hive in the picture, only it unfortunately lost its queen. I give up a lot of time to my bees, and consider bee-keeping a delightful hobby. I started some four years ago, knowing nothing about them, but with the aid of the "Guide Book" and by reading your interesting Bee Journal, I have been very successful.—Enthusiast, Anerley.

INDIGESTIBLE POLLEN AND MICROSPORIDIOSIS.

[8574] For a long time the "Isle of Wight" disease was a great mystery. It is now proved to be due to protozoal life in the form of an animal microbe called *nosema apis*. And we now learn also, from the Board of Agriculture Report, that the same infection has been answerable for diseases previously known, such as some cases of spring dwindling, virulent dysentery, paralysis, and May-pest. These had been at times terribly destructive, but sometimes disappearing under favourable conditions. As epidemics some of them had been widespread.

Soon after the splendid weeks of early summer this year, when bees revelled in avid life, with productive and reproductive powers in full swing, came the chill and wet months which brought mourning and lamentation to bee-keepers. Very soon we experts were called in frequently for consultation on bees in a bad way. Having seen bees suffering from the "Isle of Wight" disease in its pronounced form, with erect posterior wings, protruded tongue, and bright yellow vermiform excreta, I found cases of May-pest, some with and some without the apparently grey dust of mycelial covering. The soiling due to dysentery was absent, but the colon was distended, and upon forcing the contents from the rectum they were found to be of various colours, and generally to give the idea of foul, undigested pollen. Sometimes they were in appearance like a mass of foul brood matter, and then of other gradations of colour up to yellow. I saw, too, what appeared to be bee-paralysis. And there was the crawling away to die in heaps in very bad cases, or only a few bees were so seen when hives were mildly affected. There was no Board of Agriculture Report to enlighten us then. What could we say to the owners but that we feared it might be some form of the "Isle of Wight" disease, but hoped it was only May-pest or paralysis, as the case might be? Concurrently with all this and the diminished honey-flow, I scoured the hay-fields. Yes; there was white clover in plenty, but no bees were at work. Of course not. The nectar was absent, and the dainty perfume, too, was missing. I looked for the blossoms in specially protected spots under a wall by the roadside where a glimpse of sunshine might be made the most of,

A STORIFIED HIVE.

and there was perfume, and there were bees.

Was it only in fragrance and nectar that summer flowers were deficient? Pollen there was, but pollen needs sunshine for its perfection. Your esteemed correspondent "D. M. M." shows how injurious to bees frozen pollen may be. But he does not speak of soaked pollen. Mr. Geo. Hayes, however, has shown us in pictures what it is like. It is well known that flowers protect themselves from rain in various ways. They cannot, however, protect themselves from protracted humidity of the atmosphere. And of all men bee-keepers, who have seen how a few damp days will spoil an exposed sample of honey of the best consistency, ought to understand that without rain the pollen may be saturated with moisture. And however careful flowers may be they cannot perfect their pollen without sunshine. So all the way along for months there were the diseased bees with distended abdomens, and masses of undigested pollen retained by severe constipation. The conclusion could not be avoided that a provoking agent was vitiated and indigestible pollen. This conclusion has not been weakened at all by the recent information that *nosema apis* is the real cause of *microsporidiosis*. And, further, it would seem that *nosema apis* has this year had just the conditions for its multiplication, and especially its retention, and that, as the larvæ of flies feed on garbage, the intestinal parasites of bees have had every opportunity of doing their deadly work.

It has been noticeable, too, that, generally speaking, the last month's finer September weather has produced an improvement in slightly affected stocks; indeed, some appear to be perfectly healthy, though we are aware it is a long way yet before we are out of the wood. And where feeding for the winter has been actively prosecuted the bees have responded with unwonted energy in taking down the food, and starting afresh to fill with brood all the space available in three or four combs. Every day they might have been seen carrying in splendid loads of wholesome pollen.—S. Jordan, Bristol.

A GREAT HAUL.

[8575] This year, as in previous ones, I have destroyed a great many wasps' nests. I have never known them to be so troublesome to the bees as they have been during the past few months. In spite of my efforts, they have robbed two of my stocks right out. I lost two others with "Isle of Wight" disease. I poisoned a nest of wasps with cyanide of potassium on the 8th inst., and when I dug it out I found 320 queens in the nest for another year. Can anyone equal this I would like to know? I take it that now is the time to destroy the queens; if not, shall we have the same trouble next year? I still have the nest and queens. I much appreciate your valued journal, of which I am a regular reader.—C. Fowler, Berks.

ODDS AND ENDS ABOUT BEES, &c.

[8576] September closed amid a blaze of glory, like the reign of one of our Georgian Kings, but "all too late the advantage came." The wide moors, for weeks a "living sheet" of purple, yielded not a sip of nectar to the overteeming hives. Bees, like the bee-keepers, "burning with high hopes" during August and September, have now sunk into apathy and slumber, gorged with the nauseating surfeit of the syrup-cramming machine. Alas! that the poetry of these restless little lives should so often end in "bathos."

Syrup feeding, at all times a tiresome work, was this year got through with the *minimum* of trouble. One morning I left a request, which unfortunately seemed like a command to my good wife, to have the washing copper—which is an iron boiler—filled with clean water and boiling at 6 p.m., for my return. The pained look of surprise at the peremptory tone awoke me to the fact that sweetness is like a "honey piece," so I threw my arms around her neck and "kissed her for the first time in over twenty years." (We are nearing sixty.)

Everything was ready on my return, and with plenty of boiling water, a large "jelly" pan, and a gas stove, I soon had 150lb. of autumn syrup prepared. This I fed in three days and then "slept the sleep of the just."

Winter Wraps.—Years ago I applied to the village grocer for two dozen empty boll flour bags. These (having cost me two shillings a dozen) I had thoroughly washed, boiled, and dried—I trust I am not too precise. Next I visited the nearest farmer and procured a bag (the common Scotch expression for sack) of chaff. He refused the proffered shilling with sundry pleasant allusions to folk hiving "bees" in their bonnets, and the unneighbourliness of not sharing the sweets of the hives with friends like himself. His hint was taken.

The flour-sacks were filled with sufficient chaff to give a covering of four inches when spread over the brood-boxes.

They were then sewed up with a sewing machine, and have been in use ever since, both summer and winter, and there seems to be no limit to their wear. On a warm spring day they may be taken out and hung on the hive tops or on a fence for an hour to dry off the winter damp.

That Runaway Swarm.—What an

interest runaway swarms have always aroused since the days of Samson, who found one snugly ensconced in the sun-dried carcase of a Judean lion, but the bee journal of that day is silent as to how far the bees had travelled in search of that skin-covered waterproof dome!

Mr. Swabey (8556, page 386) seems rather dubious about a swarm travelling the distance I suggested in my letter in B.B.J. (page 365), because he has never known one travel beyond, or much beyond, three miles.

From his letter I infer that his bees did not alight during their journey, which I can readily credit in certain circumstances. Bees do not always swarm under similar conditions; for instance, I have repeatedly observed that the queen has gradually stopped laying during the days preceding natural swarming. I have the opinion, although (not having an observatory hive) I am not able to give attested facts, that the queen by instinct ceases to lay two or three days previous to swarming. Without doing so she would be an encumbrance and a hindrance in the flight of the swarm. I am likewise convinced that swarms travel much longer distances than Mr. Swabey indicates. The following instances will be of interest to those interested in the subject: A year or two ago I read in a Scottish newspaper that a swarm had travelled to a house in Ross-shire *ten miles from anywhere*, at least where bees were kept. Perhaps "D. M. M.," or J. M. Ellis may remember the incident. Of course this is subject to the veracity of the correspondent.

Some six years ago a shepherd informed me that he had seen a swarm resting on a lonely moor from four-and-a-half to five miles from any hives. He visited the spot the following day and found the bees gone.

Four years ago word was brought me that a swarm of bees had settled on a tuft of grass, near an ironstone pit, on a hill-top. I made particular inquiries and found that they came from the low ground, and when they left they pursued a course which was opposite to the direction from which they came. If—and there is much virtue in an if—they travelled in an undeviating route, their first chance of shelter would be beyond wild, pathless moorland, at a distance of nine miles by the ordnance survey map.

Again, in the year of King Edward's Coronation a locomotive engine driver brought me word that a swarm of bees had settled under some logs near a disused coal-mine. I at once went with him on his engine and found the swarm with combs 17 inches deep, and the sweetest smelling combs I had ever come across. It had a fine patch of brood in the centre of the cluster. The combs were only protected above; I secured the lot and took them home. I could find no trace of their setting out.

In 1907 I received a wire asking me to come and hive a swarm two miles distant; when I arrived I found it gone. The direction of its flight was pointed out; this was up the valley of the Doon, over the straggling mining village around the Dalmellington Iron Works. The swarm was observed by various persons to pass slowly along the G. and S. W. Railway, within a hundred yards of my apiary; that day a swarm entered an empty hive containing old combs, five and a quarter miles from the place where the first mentioned swarm was lost. My inference was that the swarms were one and the same. Unlike Mr. Swabey, I would not expect the bees of a hive to return from a distance of two miles. If a hive be removed that distance the motion and jolting in transit cause the bees to locate the new position, queenless or not queenless.

An acquaintance of mine troubled with a "fertile" (or rather unfertile) worker removed his hive a couple of hundred yards, drove the bees, and threw them out on a sack, or paper; some came home, but many perished on the ground. There is no doubt, in my opinion, that bees deliberately swarming do systematic scouting, particularly in the morning of the expected day, as is evidenced by their entering rooms, outhouses, greenhouses, and garden frames.

The mystery of the Loch Doon swarm is greater than I presented to your readers. I am sending you a map showing you the position of the Loch, Craigengillan Mansion, and gardens where bees are kept nearest Loch Doon. This old estate and mansion belongs to collateral descendants of Macadam of road-making fame. The gardens, situated behind the mansion and sheltered by a patch of woodland from the bleak, glacial rounded knolls that stretch away into the wild grandeur of Crocketi's raider country, are a dream of loveliness and beauty. My information regarding the passage of the swarm over the gardens was conveyed to me amid the hum of a local flower show. We were talking of the presence of the swarm in the sluice machinery, and the words the gardener used were, "I think we would see that swarm, for one passed over the gardens—a few clustered during the passage of the swarm on the topmost twigs of a lofty tree, afterwards passing on with the rest"—or words to that effect. I had taken this to mean that it was travelling in the direction of the Loch. I have since visited the Mansion House and made particular inquiries, and find that the swarm was seen by the gardeners coming from the Loch on a calm clear day. The dark speck was seen

a considerable distance off, and one gardener expressed the opinion that it came over the Loch from the south-east. The direction of flight when seen was from the Loch.

Now this could not be the same swarm that took up its quarters in the sluice-frame, unless it turned on its track and went back.

Fourteen years ago, when no bees were kept here, a swarm was seen coming from the direction of the Loch. It settled on the revolving hood of a chimney, and was captured. The parish to the south-east is Carsphairn, and to the postmaster I addressed an inquiry as to who kept bees in the locality. The answer was: "No one." I know of none until we arrive at Dalry, ten miles further south.

The bees at the Loch were cross-bred Italians, of which I know of none in the locality. Bees may not be often observed on a flight, but neither are migratory birds, except at particular points, nor salmon. These we know perform extraordinary feats under the influence of preservation of the species, and so may bees. —D. V. Dunaskin, N.B.

THE W. B. CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged	3	7	6
Gen. Sir Stanley Edwardes	0	5	0
E. F. Dant	0	2	6
	£3	15	0

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Heather Honey Stirrer (p. 354).—I am very grateful to Herr Linde for his information about the heather honey apparatus. The time taken to operate upon a comb appears to be an item deserving of consideration; probably the time could be reduced by a larger number of needles, but in view of the saving of comb it would appear to be well expended. I should judge the quality of the honey extracted by this means, if Herr Linde will allow the expression, to be superior to that from the press. Heather honey is, I consider, spoiled by excessive pressing, so that to obtain the finest quality much must remain in the wax residue. If a demonstration of the machine could be arranged for one of the B.B.K.A. conversaziones, I should be glad to provide combs for the purpose. That cannot, unfortunately, be this year, as the heather season has been a disastrous failure. I do not feel justified in investing in one of the machines at the moment, for there has been so little heather honey stirring that I have none to stir.

The Sugar Question (p. 355).—It is clear that Herr Linde used the term "consumer" in a different sense from that intended by me, which quite clears up the misunderstanding. I referred to the consumer of the exported sugar, and he evidently referred to the taxpayer of the exporting country.

Feeding Back (p. 356).—To arrive at a reliable conclusion as to whether feeding-back pays, some data are essential. I doubt, however, allowing for a certain loss in quantity (the pay of the workers), and the labour of feeding-back, &c. (less or more, according to the system adopted), whether the net difference in price between the extracted honey and the resulting comb honey would show a profit. I am led to wonder if it does, for I practised it extensively this year. The honey-flow was cut off suddenly, and I was left with a large number of partly-finished sections. Racks of these were placed on populous colonies, on shallow brood-nests, and the rest were cleaned out at night by these bees in front of their entrances. Possibly, if the honey had been extracted and thinned a better showing might have resulted, but I do not quite see why it should. It took more well-filled (but partly capped) sections to produce a sealed set than I could have believed possible, and I think the honey could have been sold in bulk to advantage.

Temper in Town (p. 356).—It is easy to speculate as to causes of special docility in particular strains of bees, and already several theories have been advanced. Personally, I incline to Miss Betts's suggestion of elimination of the unfit. This elimination must have been in process for a long time in the home counties, for, as is clear from its name, Middlesex was probably the place where worker bees were first introduced or discovered; but perhaps the following extract provides even better evidence:—"Ye beis being distemperd, (I.W.) ye Kinge orderd yem to be destroied." It is not clear from the original whether the bracketed letters refer to the distemper or to the King, but from internal evidences the record appears to be of much later date than the Conquest (1066 A.D.). In support of the theory, it is probable that "distemper" refers to disposition and not to indisposition or disease. Whether or not, Mr. Norman Angell will no doubt be glad to note this case as another instance of the survival of the fit, not the fighter.

Checking Swarming (p. 373).—It is not at all certain, in the plan outlined by "D. M. M.," that the queen would remain below unless compelled by an excluder between the two stories. Probably the omission is accidental, for an excluder is, I think, essential to the success of such a plan. On the other hand, there is danger

that a queen may be reared in the queenless portion, and that honey may be stored therein as the bees hatch out, so that at the second inversion more work than outlined may be incurred.

Instinct or Art (p. 373).—It is a beautiful and poetical idea to suppose that bees reverence the pure in heart more than the clean in body. I fear, however, that it is not founded upon fact. If it were, there might be ground for suspicion that reluctance to approach a beehive by supposedly good folk were due to fear of a loss of reputation. I am often amused by the surprise evinced by old skeppists and the like at modern handling of bees, and I might be guilty of self-righteousness did I not know quite well that the docility is due to my care, and not my character.

Queries and Replies.

[8554] *Books on Bees, Wasps, &c.*—Could you kindly, through the "B.B.J.," give the publishers' names and price of the following books referred to by T. W. Cowan in his book "The Honey Bee," numbered as follows:—(15) Lord H. Brougham, "Observations, Demonstrations, and Experiments upon the Structure of the Cells of Bees"; (62) J. D. Haviland, "The Social Instincts of Bees: Their Origin and Natural Selection"; (101) Sir J. Lubbock, "Ants, Bees, Wasps"; (102) "The Senses, Instincts and Intelligence of Animals"; (167) G. R. Waterhouse, "On the Formation of the Cells of Bees and Wasps"; (171) J. Wyman, "Notes on the Cells of the Bee"?—INTERESTED, Pinxton.

REPLY.—(No. 15) This has long since been out of print, and can only be obtained from a second-hand bookseller. It might be consulted in the British Museum. (No. 62) Out of print, but can be seen in the library of the B.B.K.A. (Nos. 101 and 102) Published by Kegan Paul and Co., London; price 5s. (No. 167) Published in "Transactions of the Entomological Society of London," 1864, Vol. II., 3rd Series, Part II. Apply to Secretary, 11, Chandos Street, Cavendish Square, London, W. (No. 171) In "Proceedings of the American Academy of Sciences and Arts," Vol. VII., January 9, 1866. Published in Cambridge, Mass. Probably out of print, but this and all such pamphlets are occasionally to be picked up through second-hand booksellers. There are several such on the Continent who make a speciality of these pamphlets. In this country they may be had sometimes from W. Wesley and Son, 28, Essex Street, Strand, London, who would send a catalogue on application.

[8555] *Bee-keeping in Jamaica.*—Could you furnish me with the name of the publishers, or where I could purchase a book called "Bee-keeping in Jamaica," by Hooper? If you are unacquainted with this perhaps you could recommend some other publication dealing with the subject of bee-keeping in hot climates.—JOHN WYLIE.

REPLY.—"Bee-keeping in Jamaica," by T. A. Hooper, published by the A.I. Root Co., Medina, Ohio, U.S.A., price 25 cents; "Bee-keeping in the West Indies," by W. K. Morrison, Pamphlet Series No. 9, published by the Imperial Department of Agriculture for the West Indies. No price is given, but apply to the Commissioner of Agriculture, Kingston, Jamaica.

[8556] *Packing Bees for Winter.*—(1) When packing bees down for the winter would it be possible to tack a piece of perforated zinc across the entrance of the hives, and store them in an outhouse during the winter? What would be the best time to return them to their old stand again? (2) If bees were fed with syrup and artificial pollen in February, would they commence brood-raising early in the spring? (3) Which do you consider the best, a ten or thirteen frame-hive?—WINTERING, Bridgwater.

REPLY.—(1) You must let the hives remain out of doors with the entrance open. To do as you suggest would kill the stock. (2) Bees commence to breed naturally about the last week in January. You must not give syrup then, but flour-candy. (3) The ten-frame hive is most suitable for this country.

THE HONEY SEASON IN CALIFORNIA.

A correspondent sends the following from the *Rural Californian*:—

"Honey producers of California are facing one of the shortest years in this State. The chief shortage is in sage honey; orange and alfalfa were both nearly up to normal, but they are small factors in the general honey production. The highest priced honey sent from the coast is that made from the black and white sage of the mountains. This year the rains held off so late that while sage blooms were abundant in many places they lacked in vitality and contained no nectar. Notwithstanding the shortage greater preparations are being made for a big season next year."

Bee Show to Come.

November 5th and 6th, at Brighton.—Annual Show of the Sussex B.K.A., in connection with the Brighton, Hove and Sussex Horticultural Society's Chrysanthemum Show, to be held in the Dome and Corn Exchange, Brighton. Five open classes, including one section and one bottle. Seven Members' Classes. Schedule from C. A. Overton, Beecroft, Crawley. **Entries close October 29th.**

WEATHER REPORT.
BARNWOOD, GLOUCESTER.
September, 1912.

Mean maximum temperature, 60·1; 4·9 below average.
Mean minimum temperature, 43·9; below average, 7·1; highest reading, 65.4 on 16th; lowest, 30·5 on 24th.
Rainfall, ·62in. in 4 days; total for 9 months, 32·05, compared with 11·16in. for corresponding period last year.
Relative humidity, 74 per cent.
Cloud, at 9 a.m., 70 per cent.
Wind force, 12 per cent.
Barometer, daily mean, 30·18; highest reading, 30·48 on 19th; lowest, 29·4 on 30th.
Remarks.—The finest period since April; drought lasted 26 days, longest since July, 1911. Bees flying freely every day.

F. H. Fowler (F. R. Met. Soc.).

Notices to Correspondents.

*** Will H. FISHER, Exeter, please send his full address to BEE JOURNAL Office, 23, Bedford Street, Strand, London.

*** A correspondent writes that P. C. D. (Chippenham) will find working drawings of solar and other wax extractors in Cassell's Work handbook, "Bee Hives," 1s. net.

J. N. K. (Stocksfield).—*Queen-mating.*—The killing of the drones is an indication that the queens are fertilised.

QUEEN BEE (Cheshire).—*Broodless Stocks.*—(1) The absence of brood is due to the season of the year, and at this time does not indicate queenlessness. (2) The progeny of the introduced queen would be "Goldens." (3) To keep bees successfully you certainly ought to have the "British Bee-keepers' Guide Book." Practice will enable you to find the queen.

S. H. E. (Chipping Norton).—*Doubling Stock.*—As the stock is strong, do not double, but feed rapidly with thick syrup. (2) Breeding would go on in all the combs.

L. L. (Nailsea).—*Dead Queen Cast Out.*—We cannot explain the cause. Probably the queen had been injured during manipulation, or she may have died a natural death.

A. A. B. (Edinburgh).—*Watery Honey.*—(1) It is too late to feed the honey back to the bees. (2) Extract it, but ripen the honey by placing it in hot water, as described in Mr. Herrod's book on "Exhibiting Bee Produce." (3) The honey will probably ferment, unless treated as advised. (4) If the combs are extracted clean they will be right for use next season, if stored in a dry place and well protected from dust.

H. J. (Walsall).—*Varieties of Heather.*—The flowers you send are *Calluna vulgaris*, common ling, and *Erica cinerea*, or bell heather. Your bees are not too far away to work the heather, and we are surprised that they do not gather from it, as the former is an excellent honey plant, while the bell heather secretes a rather thin honey of inferior quality.

E. H. G., Stirling.—*Naphthol Beta Solution.*—You have done no harm by using methylated spirit, if pure. Its use is advised when rectified spirits of wine cannot be obtained.

A. E. W. (Bucks.).—*Making Mead.*—(1) About 3lb. of honey will make a gallon of mead. (2) At least six months. You should read "Mead and How to Make It," by G. W. Bancks, 2½d. post free from this office.

E. F. M. (Belvedere).—*Disinfecting Hive.*—Scorch the inside of the hive, especially cracks and corners, with a painter's blow lamp. The exterior should be washed with a solution of carbolic acid and water, and the ground on which it has been standing should be dug over and plentifully sprayed with carbolic acid and water, or sprinkled with lime. The combs must not be used again, but melted down and the frames burnt.

Honey Samples.

X. Y. Z. (Kent).—Our criticism can be of the packing only, and not of the honey. It was so badly protected that we received a sticky wrapping and broken glass only.

S. H. (Leighton Buzzard).—The honey is mainly from clover, and is fit to show. Worth 10d. per lb. retail.

Suspected Disease.

W. F. F. (Enfield).—All we find wrong with the bees is that their stomachs are overloaded with either honey or syrup.

NOVICE (Workington), H. R. M. (Market Drayton), and E. J. S. (Ilford).—The bees are affected with "Isle of Wight" disease.

T. G. R. (Maidstone).—It is "Isle of Wight" disease. The honey is good for human food, but be sure that it is not brought into contact with other bees.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* **1d.** *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* **3s.** *per* **¼in.,** *or* **5s.** *per inch.*

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3RD CLASS EXPERT seeks appointment in Australia or New Zealand, make own hives, pay own fare.—Box 2, "B.B.J." Office, 23, Bedford-street, Strand W.C. v 22

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

CONVERSAZIONE.

For many years past it has been the practice of the British Bee-keepers' Association to hold a conversazione on the Thursday in "Dairy Show" week, thus enabling country members to take advantage of the cheap railway tickets and attend the meeting. This precedent was again followed this year, and the large number of members and friends who attended on October 10th (there being over 150 present) indicates very clearly that the Association continues to advance in popularity. Amongst those present were the following:—General Sir Stanley Edwardes, Colonel H. J. O. Walker, G. R. Alder, G. Anderson, W. B. Allister, G. Ashford, B. Alexander, W. J. Ayles, Sannyer Atkin, Mrs. de Ascanio, T. Bevan, G. W. Bullamore, C. H. Bocock, J. Brooks, G. Bryde, Mr. and Mrs. J. Bee Mason, B. Blackbourne, Miss A. D. Betts, F. Burchett, E. J. Burtt, Miss Burtt, E. Graham Burtt, A. E. Biggs, Mrs. K. Biggs, J. E. Bell, H. Broughton, Miss K. Barret, J. Cunningham, J. Cooper, T. Card, T. Card, junr., L. S. Crawshaw, H. G. Ceiley, W. G. Coates, H. M. Campbell, C. E. Campbell, E. Cree, W. H. Carver, E. F. Dant, A. G. Dant, H. Dixon, Miss L. M. Durham, F. Dickinson, H. Clarborne Dixon, C. L. M. Eales, A. Ford, O. R. Frankenstein, F. W. Frusher, G. Flashman, J. Flashman, A. W. Fair, W. W. Falkner, L. H. Goffin, J. Grice, L. Gatland, G. R. Gatland, J. H. Godman, E. Gamble, J. Gibson, H. G. Goodchild, J. Harveyson, W. Hugh, J. Hawes, W. S. Horne, G. H. Horscroft, D. Hancox, Miss Ada Hartung, F. W. Harper, G. Hayes, J. Ide, L. Illingworth, E. Illingworth, G. W. Judge, P. W. S. Jefferies, Miss E. F. Kettlewell, C. Kirkham, B. E. Knight, H. King, Miss M. Lowen, H. J. Menzies, W. E. C. Masson, C. Musson, A. J. Marriott, Miss E. L. Maynard, B. W. Millward, W. P. Meadows, M. Maynard, H. Mace, J. Nightingale, A. G. Pugh, W. Pattrick, A. P. Perkins, J. de Pear, J. Pike, E. H. Pankhurst, A. G. Patteson, Mr. and Mrs. J. P. Pannell, Mrs. J. Pearman, O. H. Rivers, A. Rayment, C. H. Rose, W. Rolfe, G. E. Rogers, A. Richards, W. Rankin, H. Rickwood, G. H. Sander, J. H. Seakins, W. H. Stoppard, M. J. Smith, O. Smith, R. N. Smith, D. Smith, W. Sanderson, J. M. Smith, S. N. Toms, T. Todd, W. B. Tallent, A. Willmott, C. Wootton, J. R. Wilder, K. M. White, E. Watson, W. Winterton, Mr. and Mrs. J. Waterfield, E. Walker, and H. Younghusband.

The meeting was held in the Lecture Hall at the Zoological Gardens, and after light refreshments had been served, a paper on "Bee-keeping in South Africa" was read by Miss M. Dagmar Sillar, late of the Government Experimental Apiary, Orange River Colony; after which R. J. Tabor, Esq., B.Sc., of the Royal College of Science, South Kensington, gave a lecture, illustrated by lantern slides, on the "Fertilisation of Flowers," the latter being one of the special lectures arranged in connection with the Experimental Apiary.

Mr. T. W. Cowan, who presided, in introducing Miss Sillar to the audience, stated how very pleased he was to see her back again in this country; he also congratulated her upon the splendid recovery she had made after her serious illness. He had no doubt that the audience would derive great pleasure from listening to the experience of an English-trained expert in South Africa.

Miss Sillar then introduced the subject of her paper as follows:—

It was with reluctance I consented to read this paper on South African bee-keeping, as I feel more at home doing practical work among the bees than reading a paper before an audience the majority of which probably know more about bee-keeping than myself.

I am something like the candidate for third-class honours, who, at the conclusion of the examination, when asked how he liked the ordeal, replied, "I like the bees better than the examiner." I prefer bees, even though they do sting, to an audience; but, however, I will do my best to interest you and give you some idea of the industry in the colony.

I learnt my bee-keeping in England, and it is eight years since I went to South Africa to take up the work there. It is difficult to give you a clear idea of the difference in the country, and climatic conditions of Great Britain and South Africa. Only residence in the two countries can do this.

For centuries bees have been kept in the most rudimentary manner, rush and grass baskets, clay moulded into cylindrical-shaped receptacles and dried in the sun, and the bark of trees were used as hives. Bees were also kept in hollow trees, old disused ant-heaps, and among rocks.

I think "South African Bee-keeping," by H. L. Attridge, which was published in 1909, is the only hand-book on the subject in that country, and I do not think I am wrong in saying that bee-keeping was not carried out as a profession, or perhaps a better word is industry, until fifty years ago, but no records have been kept, so there is very little reliable information on this point. I can only speak from experience of the last eight years, and during that time there has been very great progress in the industry.

I have met two or three bee-keepers who have been following modern methods for the last twenty-five to thirty years, and to quote Mr. Attridge's words, "like many other industries in this country bee-keeping has had its ups and downs, prejudice and apathy for many a long day retarding its progress along modern lines."

However, by steady plodding the initial difficulties have been overcome and its future assured. The Transvaal Bee-keepers' Association was formed in the year 1908; this undoubtedly gave an impetus to bee-keeping. In 1909 the Association was reorganised and called the South African Bee-keepers' Association, and affiliated to the British Bee-keepers' Association. In November, 1911, the first issue of the *South African Bee Journal* was published: until that date the Association had a few columns in one of the agricultural papers. In July, 1912, the Journal was enlarged, and now both the Western Province Bee-keepers' Association and the Natal Bee-keepers' Association are affiliated to the South African Bee-keepers' Association, and have the united advantages of the *Journal*. These facts show the steady progress made; yet there is still much to be done. One rarely takes up a South African agricultural paper now without seeing something about bees in it, and at all the principal agricultural shows in each of the colonies the classes for honey, wax, &c., are well supported, the bee tent is looked for and always attracts a large audience during the lectures. Two examinations for the B.B.K.A. third-class certificates have been held; eleven candidates presented themselves, and eight received the certificate. I hope before very long they will present themselves for the second-class examination. It is an interesting fact that South Africa is the only colony which is under the wing of the mother country in connection with bee-keeping.

We often hear that South Africa is the only country in the world where disease is unknown. South African bees are singularly free from the serious diseases known in other parts of the world, climatic conditions and freedom from pre-disposing causes, being undoubtedly helpful in this direction. Foreign bees were being so largely imported into the different colonies, and from time to time there have been scares that "foul brood" had broken out, but any suspicious case has been drastically dealt with. The Government very wisely took up the question before it was too late, and by means of legislation stopped the importation of bees, honey, and wax into the country. The law has now been modified so that comb foundation only is now imported, but it must be accompanied by a guarantee that it has been sterilised, and been kept at a temperature of 212deg. for two hours; this, of course, does not improve the wax, but is an absolute safeguard against carrying disease in any form.

In April, 1911, a stock was found showing signs of foul brood. Samples were sent to the Chairman of the B.B.K.A., Mr. Cowan, and he reported that the foul brood bacilli were present, but were not identical with those in Great Britain. When this was reported to the Government Agricultural Department they at once had the hive, bees, and all appliances destroyed, and compensated the owner; they also appointed a temporary inspector, who visited all the apiaries round the district. No serious cases of disease were discovered, but in some instances bees were found very badly kept.

Just before I left the country I was asked by the Government to inspect again, and visited all the apiaries near Johannesburg, going very carefully through all the colonies. I only found one bad case, and I watched it carefully. At the end of a fortnight this stock was almost healthy, no sign of disease appeared in the brood, and honey was being brought in abundantly. At an altitude of 4,500ft. above the sea-level I do not think disease will flourish, but I am sorry to say some of the bee-keepers are very careless, and the colonies do not receive proper attention.

South Africa is an ideal country for bee-keeping, certain districts having the best flora in the world; the climate also is very suitable, as is indicated by the numbers of nests of wild bees. The temper of some colonies certainly seems to be very uncertain. Bee-keepers tell you their bees went mad without any reason, and stung everything, killing poultry, dogs, and sometimes horses and cattle. I think myself there is always a reason for their being so very cross; the temperature may add to their irritability. I have only twice seen bees in this state, and I do not wish to see the like again. I think this tendency will in time be overcome by promoting modern methods, by breeding from the best-tempered bees, and care being taken in selection of sites for apiaries, thus avoiding the other stock coming in contact with the bees; educating bee-keepers will also eliminate carelessness or ignorance, and these serious losses will be avoided. I know of one case where a farmer lost over £1000 worth of stock through his calves being attacked by bees. I have found that these very savage South African bees are the best workers. I think the native bees are more sensitive to sounds and disagreable smells than the bees at home, and think this may be due to the rarity of the atmosphere. The

native bees of South Africa all seem to be smaller than the British, but there are various differences to be found even in the inmates of the same hive. The colour, size, and markings of the native bee are very indefinite. Mr. Attridge says in his book: "At the top we have the bright yellow kind, partaking of the characteristics of the Italian with a shade of Eastern manners, down to the smaller and darker bee, which is not so docile." Neither of these varieties, if we can call them such, is constant, as from the same mother spring workers of different shades and appearance. In the same hive both the above kinds are often found, and also another grade, which must not be confounded with the young bees showing a grey hairy fringe on the abdominal segments.

The bee commonly called by the Dutch the Kranze bee seems to be the most ferocious of all, and they will attack and sting without any apparent reason. They are very small and dark in colour. When domesticated the wild bees have a great tendency to swarm, but are excellent workers. The agricultural shows have done a great deal to develop bee-keeping on the right lines, and the grading of honey by the South African Bee-keepers' Association before it goes to the depôts for sale has raised the standard considerably. The prices last month were:—First grade sections, 15oz. to 16oz., 1s. 5d. each; second grade, 1s. 2d. each. Good sections that have candied, 11d. to 8d. each. Extracted first grade honey, 18s. per doz.; second grade, 16s. per doz.; third grade, 14s. per doz. Beeswax: raw, 2s. per lb.; treated, 2s. 6d. per lb. There is a great demand for wax throughout the whole country, and in the large towns the demand for first-grade honey is rapidly increasing, but the bee-keepers, with a few exceptions, have not yet learnt the art of sending honey to market. Certainly the conditions for transport are not so easy or so safe as in this country, and the tremendous distance some of the produce has to travel is unknown here. The price of hives and appliances was at one time prohibitive, and but for this, no doubt, bee-keeping could have advanced more rapidly. I am afraid this was due to the grasping methods adopted by some of the British manufacturers and their agents, together with the high freightage rates.

At one time a good W.B.C. hive cost £3 17s., and to this was added the carriage, no mean sum considering the fact that hives are charged at the highest rate.

The Americans were more pushing, and sold hives much cheaper, also through their light construction the freightage is much less, as will be shown by the following figures, being the cost of freightage from the ports to the Transvaal:—

Pence per 100 lb.	Cost of American Hives.	English W.B.C.
Delagoa Bay, 84	2s. 6d.	5s. 1d.
East London, 92	2s. 9d.	5s. 7d.
Port Elizabeth, 97	2s. 10½d.	5s. 11d.

An agitation is now on foot to get these reduced.

It will be interesting to my audience to know that experience has taught me that there is no hive which will stand the climate of South Africa, and in which bees thrive so well, as the "W.B.C." American hives I found most unsatisfactory; through the material being so light the wood twisted, and in a very short time they became useless.

Some South African writers advocate the use of American hives, and state that British-made ones are of no use for the climate; this is mainly due to the bad samples they have tried. It seems to me that the idea of some people at home is that anything will do for South Africa, and goods that would not be offered at home are sent out there. This is a foolish policy, and has done a great deal of harm to British produce. The South African knows, can get, and will have goods of the very best make, therefore only first-class goods should be sent if the trade is to be kept and increased. At Grootvli I had W.B.C. hives made in England; these were well cared for and painted each year, and at the end of eight years these hives were almost as sound as the day they were made.

The price of British hives has now been reduced. This has been brought about by competition, and a good W.B.C. hive can now be purchased for £2 5s., practically the same price as is charged at home; and if, as I have remarked before, only the best goods are sent, there is a splendid opening for British manufacturers. It would be a great advantage if the bee-keepers in South Africa would decide upon a standard for their hives. At present, in the same apiary, one finds British, Hoffman, Danzenbaker, and very often that particular bee-keeper's own size of frames. In the Transvaal and Free State and the Western Province the British standard seems to be steadily gaining ground, but some of the Natal bee-keepers say the American patterns are more suitable for their climate. I repeat that personally I prefer the W.B.C. to any other, the air space being of greater use in a country where the changes of temperature are so great and so sudden. In my own room last December the temperature was 112deg. at four in the afternoon, and by 4 a.m. was only 40deg. It was a wood-and-iron building, constructed without air space, which showed me very plainly the great advantage of having this space. Some few bee-keepers argue that the South

African bees are too prolific, and the size of frames too small for the British hive to be suitable, but these objections can easily be overcome by using two body-boxes.

The flora of South Africa is in some districts the finest in the world. After the rains flowers spring up all over the veldt, and the natural forests in Cape Colony swarm with wild bees and abound in flowering trees. One tree bears the appropriate name of the "honey bush." The eucalyptus, which is being planted all over the country, yields honey during the winter. The acacia is one of the first trees to blossom in the spring, the tamarisk, beefwood, and mimosa yield good honey, as do also the fruit trees, especially in districts where there are large orchards. In Natal are the mango, loquats, orange blossom, and in some parts the veldt flowers alone yield an abundant harvest. Lucerne is largely grown, but it has not quite come up to the expectations of the South African bee-keepers, as the bees will not work on it if there are any other sources of nectar; the flowers explode and hit the bees when they alight, and this disconcerts them. Lucerne that is irrigated with water pumped up direct from wells, and which is not allowed to stand some time in the sun, being run straight on to the land, does not secrete nectar. In the Cape Province this plan is not followed, but irrigation from reservoirs is carried on, and the farmers reap some excellent crops of honey. The tree lucerne yields a honey of good flavour, and is readily visited by the bees. Some plants and trees only secrete nectar at certain times of the day during the very hot weather, generally in the early mornings and evening; in fact, during very warm weather the bees frequently leave the hives and work by moonlight some time before daybreak.

It is impossible to give the slightest idea of the differences of climate in such a vast country. In some parts there is not a drop of rain for from eleven to fifteen months at a time; then a deluge comes. I have seen four inches of rain fall in one hour. It was quite usual to have 16deg. of frost at night in June on the farm I was on in the Free State, and last winter we had from 21deg. to 26deg. of frost, but that is very unusual. Throughout the whole country, however, there is always the bright sunshine, and the clear air which means so much to Sunny South Africa.

The South African bees are excellent workers; I have heard of cases in Rhodesia and Cape Colony where twenty-one sections were filled in two days. The best record I personally know of is a September swarm put into a new hive, and it produced 148lb. of honey—one natural and one artificial swarm—and went into winter quarters with five frames of sealed honey. I went down from Bloemfontein to Durban show one June. Our bees in the Free State were wintered just like bees at home, and the queens had not laid since April. I found the Natal bees busy at work, queens laying and brood in all frames. It was quite hot weather in Natal. I have heard it stated that the short (or no) rest of the queens during winter causes less energy in the spring, and the queens wear out sooner; consequently some bee-keepers re-queen every year. It has been suggested, but I do not think tried, to cellar the hive for a month or two during the winter, and so compel a complete rest. One great mistake made by beginners in bee-keeping is that they have only studied British and American books, and fail to realise that the seasons are different, and everything does not apply to South Africa. There are also people who seem to think that they can keep bees without studying them at all. One great safeguard to bee-keeping is the fear of stings, this prevents many undesirable would-be keepers of bees from doing so.

Bees in South Africa have many enemies; different species of birds, ants, wax moth, deathshead moth, snakes, spiders, toads, sometimes Kaffir boys, and, worst of all the "bee pirate," or bee tiger as it is called, and by the Dutch "mal-bij," which means bad bee. It is a species of Digger wasp which preys upon hive bees.

There are several species of these, the banded one and the yellow being most common. They are very strong and swift in flight; the yellow ones catch the bees on the wing and on flowers, and the striped ones wait on the floor-board of the hive and catch them as they go in and out; the bees become so frightened that they will not leave the hive, but cluster at the entrance. Their procedure is to sting the bees to death, lay their eggs in the body, carry this off to their burrows, and there the young hatch. Various methods are adopted to catch these pirates; the most useful seems to be a white plate half filled with paraffin oil and water placed in the sun near the hive. This attracts them and dazzles them, when they drop into the liquid and get drowned.

South Africa is a young country with great possibilities for agriculture, and I feel sure that bee-keeping will one day become a great industry, and a rich source of national wealth. I have heard honey classed as one of the "sample" products of the country.

Bee-keeping is now being started as an independent industry. I heard of one young fellow who is starting a farm with between 300 and 400 colonies; he is by no means a beginner, and is likely to do very

well, as he is going to the Barberton district, which is an ideal bee country.

I left South Africa with the very greatest regret, and would like to go back there some day. I hope that some of the Council of the British Bee-keepers' Association will visit the country before long, and they will then see for themselves the possibilities, and what is required for developing the industry.

(To be continued.)

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

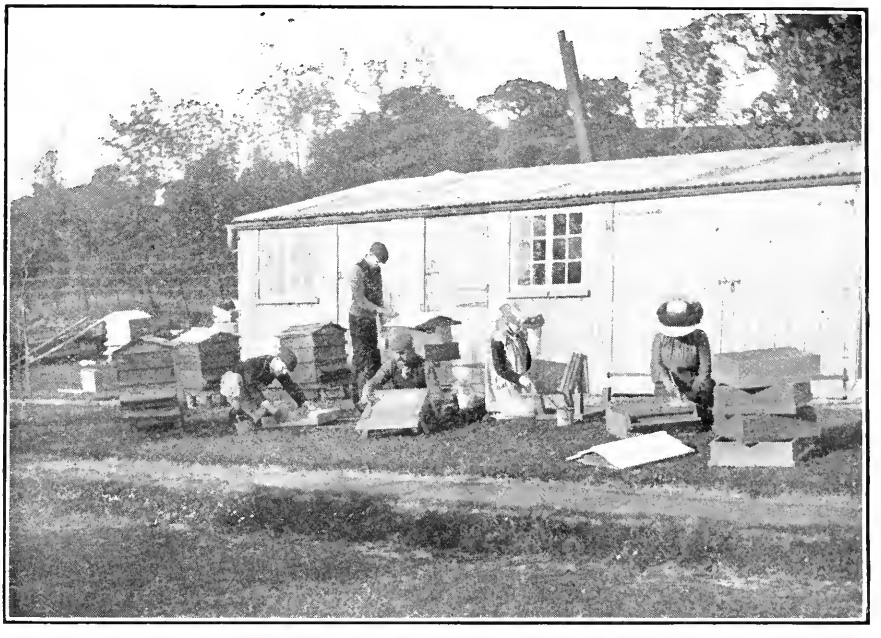
THE CARE OF APPLIANCES.

(Continued from page 404.)

The next portion of the hive to be painted is the outer case. If the porch is a moveable one it should be taken off before the paint is applied, so that the back of the porch as well as that portion of the hive to which it is attached may be painted.

Turn the outer case upside down and paint in the rebate which fits upon the floor-board; then reverse and paint the outside, including the top edge. When completed, lift on to the floor-board by placing the hands inside so that the paint is not rubbed off or finger-marks left on the outside; do not put the outer case in position, but turn it cornerwise on the floor-board; in this position the paint will set hard, and the parts will not stick together, which would be the case if the wet parts were fitted together. When this occurs, so tightly does the paint hold that portions of the wood are sometimes broken away. Paint the porch and entrance slides, rearing them end-on inside the hive. Now proceed with the lifts, treating them in the same way as the outer case. Finally the roof is painted; but before doing this remove the cap from the ridge, so that it can be painted underneath and the roof covered with calico. The work should be carried out under cover, for if rained upon the spots will make a rough surface. The hive should stand for several days to harden. All the operations described can be seen in the photograph.

After the first coat or priming has hardened, all the nail-holes should be stopped with putty, then a smooth surface obtained by stretching a fine sand-paper over a piece of wood, with which the surface of the hive is rubbed with short, sharp strokes. Unless a piece of wood is used inside the sand-paper the putty will be rubbed into hollows.



PAINTING HIVES.

Before proceeding with the next coat of paint the roof should be made rainproof. If treated as described below and taken care of afterwards, roofs will remain watertight for years.

Obtain a piece of calico about three inches longer than the top of the roof, also some tinned tacks; do not use cut tacks, as they will rust. Turn the roof upside down on the bench or table, and tack the calico along the eave on the underside about one inch in. Now turn the roof the right

side up and coat it with paint the consistency of porridge, stretch the calico tightly over, and tack on the underside of the other eave, then tack under the gable at one end, finishing by stretching as tightly as possible and tacking under the other gable, rub the calico well down into the paint, and allow it to stand for at least a fortnight.

(*To be continued.*)

THE W. B. CARR MEMORIAL FUND.

Although this fund has been reopened for some time, the amount received up to date is very small. Considering the benefits derived by bee-keepers this ought not to be the case. The form of the memorial has now been definitely decided upon, so that subscribers know for what purpose the money will be used. When the fund was first opened a number of bee-keepers wrote saying they would defer sending donations until they knew what was to be done with the money, and as we are now able to inform them, this excuse is therefore done away with, and we hope they will forward the sum they intended to give. As the fund stands at present, it will be possible to award the medal once in three years. It ought to be possible to raise sufficient money to bring the fund up to £100, in which case it could be given at least once in two years.

Several have given a second donation, and I appeal very strongly to all bee-keepers for subscriptions, no matter how small (even sixpences will count), as if the fund is to reach the desired sum, about £30 more will be required.

The B.B.K.A. is almost the only Association of its kind that has not a gold medal for presentation; let us remedy this for all time.—W. Herrod, Secretary B.B.K.A., St. Paul's Chambers, 23, Bedford Street, Strand, London.

BEE DISEASE BILL.

We quote the following from the *Times* of October 17:—

Mr. Runciman (Dewsbury), in moving the second reading of the Bee Disease Bill, said that the bee industry had severely suffered from disease, notably the "Isle of Wight" disease, which had spread as far as Scotland. So far as he could ascertain, the value of the hives in England and Scotland ran to nearly £1,000,000 and in many parts of the country the whole of them had been destroyed. As the result of a conference between the Board of Agriculture and the Beekeeper's Association this Bill had been drafted providing that the importation of infected bees should be under regulation, and, if necessary, prohibited; and that where the disease had spread to any area the local authority might inspect, and in case of hopeless infection destroy, the hives. The orders would be enforced under powers similar to those in the Diseases of Animals Act, and the officers of the Board would have powers of inspection. The disease spread with great rapidity and particularly in the early months of the year, and unless the Bill was got through in the near future, it would be impossible to make the necessary arrangements to regulate the isolation or extermination of the disease.

Mr. J. Hope moved the adjournment of the debate on the ground that the House had received inadequate notice that the Bill would be taken.

Mr. Jardine (Somerset, E.) seconded the motion.

Mr. C. Bathurst, the Marquess of Tullibardine (Perthshire, W.), and Mr. Duke (Exeter) urged that the motion should be withdrawn.

Mr. Illingworth (Yorks, W.R., Shipley) undertook to give the longest possible notice of Bills the Government would propose to take after 11 o'clock.

Mr. J. F. Hope withdrew his motion.

Mr. W. Rutherford (Liverpool, West Derby) complained of a number of the provisions of the Bill, which, he said, conferred unprecedented powers on the Board of Agriculture.

Colonel Lockwood (Essex, Epping) thought the Bill a good one, and hoped that with some amendments in Committee it would be agreed to.

After further debate, the Bill was read a second time.

MARRIAGE OF MR. W. T. MEADOWS.

We offer our congratulations to Mr. W. T. Meadows, eldest son of Mr. and Mrs. W. P. Meadows, the well-known appliance manufacturer, of Syston, upon his marriage with Miss M. Gamble, by special license, at the Parish Church, Syston, on October 2nd.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

WINTER STORES.

[8577] The most prominent features of the bee season just closed were the comparative failure of the honey crop, numerous late swarms, frequent failure of virgin queens to become mated, and threatened famine in the autumn.

In many districts, the stores gathered in May were entirely consumed in June.

and swarms hived in July had no opportunity to lay by sufficient store for the winter. Late July and all August were wet, and bees do not store surplus in September as a rule. Those who have driven from skeps here in the west, report that a large percentage have practically no honey, and all are light. The skeppist is not only unlikely to feed sufficiently, but finds it difficult to do so if he will. It is to be anticipated, therefore, that there will be considerable mortality among the skeps this winter. The owners of light skeps which are unlikely to winter, should not hesitate, even at this late time of year, to feed them rapidly with warm syrup.

A skep is so well ventilated that it does not appear to be affected in the same way as a wooden hive by the presence of much unsealed food. Two years ago I drove the bees from a skep for a neighbouring farmer who wanted some honey, about November 1st. The bees weighed 1¼lb., and were headed by a young queen. Not wishing to disturb any of my hives, for the sake of experiment, I telephoned to Bristol for a new skep, and hived the bees in it the same night. Mild weather followed, and the bees repeatedly emptied a small rapid feeder placed on the floor of the skep. Early in December their new combs reached the feeder, and the latter had to be removed. Syrup was then given at the top, and they fed and bred during the whole winter. I have had three artificial swarms from them since, and they are still flourishing.

Frame hives, however, cannot be treated in this way, and hives which are not sufficiently stored now require candy. Many will not receive it till January or February. Personally, I regard candy as an evil for bees, although occasionally a necessary one. At one time I often relied on candy to bring my stocks through the winter. If I did not lose stocks through the unnatural excitement caused by the candy on mild days, I certainly did in severe weather, when the bees were unable to eat and "invert" it, and when the hives should not have been disturbed.

During the last three years I have made it a rule to feed as heavily as necessary in September. Not only have I had no cases of spring dwindling, but I have also avoided the trouble involved in making and providing candy. As I keep only young queens in their first year, I do not indulge in stimulative feeding at any time, although I sometimes uncap stores in the spring. Generally speaking, I have come to regard all feeding, except that necessary in the autumn, as undesirable. Where queens are kept more than a year I sometimes recommend stimulation; but from long experience I am sure that the best practice is to re-queen in the summer, feed adequately in September, and leave the rest to nature.

During the last few years I have acquired the habit of ascertaining the state of a hive with regard to its stores by gently lifting the back about an inch from the ground. This plan saves much time and trouble, for it is only necessary to open those hives which are palpably light.—SOMERSET.

"ISLE OF WIGHT" DISEASE.

[8578] Twenty years ago I recollect seeing a hive of bees suffering from paralysis, and to the best of my belief, the symptoms were identical with the present "Isle of Wight" disease. I gave them salt in their drinking water and they gradually got better.

At the end of July last, I had two hives attacked with the malady; both were strong stocks, and had given a surplus of 80lb. and 50lb. In a few days hundreds of bees were crawling on the ground with the wasps attacking them from all quarters and themselves dying by hundreds. I transferred the bees at once into clean hives, previously dressed with Ayles' cure, but in spite of this they gradually dwindled and died, and so for the first time for nearly forty years I am without bees. It has been one of the saddest sights to me to see my poor little friends crawling on the ground and being dissected by the wasps, without being able to help them in any way.

In an apiary a quarter of a mile away I transferred six stocks into clean hives dressed with the cure; one of them was suffering badly from the disease, and promptly died out, but the other five are at present healthy so far as I can judge, and I am hoping they will keep so. If all goes well I will start with a new swarm in the spring.—ELVEY E. SMITH, Southfleet, Kent.

EXHIBITING AT THE DAIRY SHOW.

[8579] I shall be glad if you will publish this complaint in the "B.B.J.," because we are always told that entries should be forthcoming to support the show, and I think the Show Committee ought in return to support the exhibitors. Twice in recent years I have sent good honey to the Dairy Show, only to find the awards first and then reserve, no second or third prize being awarded. Five classes have been dealt with in this manner this year, and it is not very encouraging to exhibitors. The entry fees are the highest in the English show lists, and the prizes awarded most charily. For myself, this year it cost me 5s. 2d. for two entries, 4s. for carriage, and although sent in a spring travelling crate, I had twelve out of eighteen sections reduced to pulp and most of the honey lost. A second prize would have compensated me somewhat (though it would

not have cleared my expenses), and been some encouragement for the future; as the sections were good, no matter what conditions may be attached to the number of entries.—Jos. G. Nicholson, Langwathby.

[While agreeing to a certain extent with our correspondent, we must point out that the British Dairy Farmers' Association know their business best, and the method of withholding prizes unless there are a certain number of entries is followed right through the show, even to the cattle classes. It cannot, therefore, be expected that they will make an exception in the case of the honey competition, which is the smallest department in the whole exhibition.

We also find that the statement that only one first was awarded in five classes is incorrect, the awards being as follows:—One class four prizes, three classes three, three classes two, four classes one prize. With regard to the smashed sections it is much to be regretted that railway companies do not exercise more care in dealing with goods, as although the sections were packed most carefully in a spring crate, six were completely smashed on arrival. This is the fault of the railway company, and not of the exhibition officials.—Eds.]

WHY NOT A MID-BUCKS B.K.A.?

[8580] Having been a reader of the Bee Journal for some time, I shall be glad if you can give any reason why we cannot have a Mid-Bucks Bee-keepers' Association in this county, as there are a great many bee-keepers here who do not belong to an association. At the agricultural shows in this district we always get a good number of exhibits, and I think an association would do well. Hoping some of your old readers will take this up.—A Young Bee-keeper., Bletchley.

FINDING A MARKET FOR HONEY.

[8581] I beg to thank you very sincerely for the publicity given my letter in the "B.B.J." (page 386) and your proffered help to enable me to dispose of the honey for the bee-keepers of this district. Thanks to advertisements in your journal I have now obtained a market for all available this season. If spared next year, I intend sending you samples for inspection and expert advice as to quality and market value, and advertise accordingly in the "B.B.J." There is, however, what I consider a grave hindrance to the marketing of honey, especially in this district, and that is the excessive freightage rates to London and the South of England. I have written the Department of Agriculture twice on the subject without receiving an acknowledgment, but perhaps they are too busy dealing with foot-and-mouth disease to bother about small details such as the marketing of honey, &c., and I would be obliged if you could bring the matter before the proper authorities to deal with it. I sent two gross of sections to Birmingham, packed in spring travelling cases per goods train, for which I had to pay £1 2s. 10d. (rate 85s. per ton). I have an order from a Brighton firm for all I can send, and the railway company here can only book to London by goods train at 95s. per ton, and can give no information as to what the amount would be from London to Brighton. Therefore I have to send it by reduced passenger train rate, which they can book direct. A sample gross cost me 13s. 9d., and two gross to-day cost me £1 7s. 4d., and in each case I have to sign at owner's risk, and pay the last halfpenny, and take my chance of win or lose. Why not allow a farm produce rate by goods as well as by passenger train for honey, when one has to take one's chance in either case? A man who knows the business, I should say best in Ireland, to-day informed me that honey could be landed in Brighton from California at the same price as I was paying; and spring travelling cases, when returned, appear as if a sledge hammer had been taken to them to break them on purpose. I purchased these crates from a Worcester firm, and received them with six broken out of twelve. The first time I sent them to England with honey they arrived back ten broken out of twelve, and it takes time and money to repair spring cases, and ordinary boxes are not suitable, as no matter how carefully packed, there is a high percentage of broken sections, which I have learned to my cost. I have put in two claims for breakages to crates, but the railway company are in no hurry to acknowledge them. Again thanking you for past aid, and trusting you will be able to solve my present difficulty.—Irishman.

[If we desired to do so, we could fill the Journal over and over again with letters similar to the one from an Irish reader which we print above. Our object being to benefit our readers throughout Great Britain as much as possible it is a great satisfaction to us to find that we are doing so. Without egotism, we claim that we give better value for money than any other bee publication, on account of our large and increasing circulation. This has increased considerably in Ireland during the past twelve months, through the advertisement obtained by satisfied readers and advertisers, who are generous enough to tell others when they find a good thing.

Railway freightage is a serious problem, and one we have endeavoured to tackle for several years. In our experience the

best method of packing sections is to obtain Tate's cube sugar-boxes and pack not more than three dozen in each box. This allows of plenty of suitable packing material, and if properly carried out, sections can be sent by goods train. A saving is made on carriage, and as the boxes are cheap there is no need to have them returned. We have sent sections to Holland packed in this manner, and they arrived without a breakage.—EDS.].

Queries and Replies.

[8557] *Queen-rearing in Baby Nuclei.*—I read in the chapter on queen-rearing in the "A B C of Bee Culture," page 355, 1910 edition, that "after the virgin is given to the nucleus and the latter is in full operation, a ripe queen-cell should be given and the virgin taken out again." (1) Can you kindly give me any explanation of this further giving of a cell when the virgin has already been successfully introduced, as when I make nuclei I always give virgins and leave them until fertilization takes place? (2) Another thing I am not clear about is, how long can I leave a fertile queen in a nucleus? To make it clearer, suppose I make up a nucleus and introduce a virgin in June, and the latter became fertilized a few days later, could I leave her in the nucleus until I wanted her for requeening a hive, say, in September? I am rather afraid she would fill up the combs with eggs and afterwards lead off a swarm. What could I do towards giving her more room, seeing that the compartment holds only two half-frames? How would it do in such a case if I were to remove the combs she had filled and give them to another hive to hatch out, replacing them by frames of foundation? Of course, you understand my mating-boxes are on the same principle as Mr. Sladen's twin hives. (3) Next season, to prevent swarming, I intend placing a rack of shallow-frames on the floor-board, and the brood-chamber on top of that with excluder between, and another excluder on the brood-chamber with a super of shallow-frames above. Is this, in your opinion, a good plan, and what will become of any drones, seeing that the excluder will prevent their getting out, or would I have to place the brood-frames 1¼in. from centre to centre to prevent the breeding of same? Your reply through the "B.B.J." will greatly oblige.—J. E. JAMES.

REPLY.—(1) If you read paragraph six on page 356 of the "A B C of Bee Culture," it will explain why cells are given in place of the virgin, remembering that it is a twin baby nucleus. (2) You cannot keep fertile queens in baby nuclei very long, or they will lead off a swarm. (3) We do not approve of your plan. It is much better to give room in advance of requirement, and ventilation to prevent swarming.

[8558] *Drones in late October.*—I have one stock, an early June swarm, which I bought in July on its combs, eight of which are now covered with bees.

They seem very healthy, though disease is still rife in this neighbourhood, and even now (October 18) are working hard bringing in pollen, though I do not know where they gather it as there are few flowers left, with the exception of Michaelmas Daisies, after the hard frosts we have had. Since the beginning of August, when, according to the text books, drones are usually expelled or killed, I have always noticed an exceptional number of these flying, very few having been thrown out of the hive, and therefore on the 13th inst., when they seemed to be more numerous than ever, I covered the entrance with a piece of excluder about two o'clock in the afternoon, thinking that those shut out would be killed by the night's frost. A large number returned during the afternoon, but by evening they had all disappeared, only to return about the following midday, when I killed them on the alighting-board—159 in all. Will you kindly say (1) Whether you think these are robber drones, though I may say they usually seemed to have free entrance? (2) If they belong to the hive have I done right in killing them; my object being to save stores? (3) Does this point to an exceptional amount of drone breeding on account perhaps of the queen being old?—W. J. G., Hants.

REPLY.—(1) We should say the drones managed to get back into the hive through some unprotected hole and came out again the next day. Drones do not rob. (2) Drones are of no use at this time of year. (3) Their presence now, points to queenlessness, or an unfertile queen.

[8559] *Knotting for Painting Hives.*—Will you please let me know how to make knotting, as described in "B.B.J.", October 10 (page 403)? How much red lead and how much glue are required, and how should I melt or mix it? I hope you will publish "Helpful Hints for Novices" in book form.—NOVICE, Bairley.

REPLY.—Knotting is made by dissolving shellac in methylated spirit. Make a saturated solution, and then thin it a little with more spirit, so that it goes on easily. If red lead and glue are used, melt the glue, making a very thin solution, and rub in red lead till it becomes a thin paste. We are receiving so many requests similar to yours that it is quite possible we shall publish the articles in book form.

[8560] *Pollen in shallow frames.*—Quite a number of my new shallow frames have had pollen deposited in them. What is the best thing to do? Shall I cut it out and leave the bees to repair the damage, or is there a better plan? Also, owing to the abnormally late season, my extracting is only just completed. As it is too late to give the frames to the bees to clean up, shall I leave them in their present condition, wet and reeking with honey?—L. E. R.

REPLY.—(1) You can get the pollen out by syringing the combs with water from a garden syringe. (2) It would be best to put the wet combs on a hive to get them cleaned. If the bees will not do this, store the frames in a dark warm place.

[8561] *Various Queries.*—Would you kindly answer the following questions in the BRITISH BEE JOURNAL?:—(1) What is flour-candy made of, and when should it be given? (2) Is it absolutely necessary to boil sugar and water before giving it to the bees? I only make the water hot enough to melt the sugar, and the bees seem to take it down with avidity. (3) I have only one hive, and I work for sections. Would it pay me best to try and prevent my stock from swarming, or should I make another hive? (4) When should the first rack of sections be put on the hive (in Scotland)? (5) At present I have only eight frames in my hive, having removed two spare ones. When should I return these? (6) If in the swarming season I kept an empty hive near the stock, should a swarm come off I suppose the chances are it might take possession of same, provided I have stores in it?—DOUGAL.

REPLY.—(1) Flour-candy is made by stirring in a little pea-flour during the cooling process. (2) It is not absolutely necessary to boil the syrup, it must be made thick and heated till all the sugar is dissolved. (3) To obtain surplus you should not allow the bees to swarm. (4) Just before the honey-flow. You are in the best position to determine this. (5) About April or May. (6) Yes, most probably it would.

[8562] *Mead Making.*—In the pamphlet by Rev. G. W. Bancks, on "Mead and How to Make It," the author gives details of licences required for the *sale* of mead. Our local Excise man has been making enquiries as to whether there are any people around here who make mead. The man whom he asked told him that it was a lost art, and thought it was not made, but knowing that I had made some he passed me the hint. Can you tell me why the Excise man was enquiring? Is there any new regulation regarding the *making* of mead? Obviously, though friendly with the official in question, I cannot go to him for the information.—CURIOUS.

REPLY.—There are no restrictions against making mead, any more than there are against making home-made wine.

Bee Show to Come.

November 5th and 6th, at Brighton.—Annual Show of the Sussex B.K.A., in connection with the Brighton, Hove and Sussex Horticultural Society's Chrysanthemum Show, to be held in the Dome and Corn Exchange, Brighton. Five open classes, including one section and one bottle. Seven Members' Classes. Schedule from C. A. Overton, Beecroft, Crawley. **Entries close October 29th.**

Notices to Correspondents.

W. D. G. (Briton Ferry).—*Utilising Hard Candy.*—Add a little water to the candy, and remake it by boiling again.

BRANDRETH (Surrey).—*Earwigs in Hives.*—Use powdered naphthaline, placing it under the lugs of the frame. Earwigs will eat a certain amount of honey, and should be kept out of hives if possible.

E. H. G. S. (Comrie).—*Late Drones.*—The presence of drones at this time of year indicates queenlessness or an unfertile queen.

W. B. (Oulton Broad).—*Stock destroyed by moth.*—The hive has been attacked by wax moth; it is their larvæ you have sent.

J. B. F. (Shipley).—*Will bee-keeping pay?*—Properly managed, bees will pay. In a good season they frequently yield an average profit of 20s. per stock.

Honey Samples.

H. N. (Weobley).—(1) The honey is mainly from fruit, and is worth about 9s. 6d. per dozen jars. (2) If you hybridise the bees it is almost certain you will get a vicious strain.

Suspected Disease.

M. G. (Dunstable).—The bees have died from "Isle of Wight" disease. The small "lumps" are a parasite, the *braula coeca*, or blind louse.

J. P. (Salisbury), E. A. N. (Eltham), R. J. (Penarth), and C. B. A. (Watford).—The bees have "Isle of Wight" disease.

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

THE CONVERSAZIONE.

(*Continued from page* 425.)

Mr. Cowan, in thanking Miss Sillar for preparing and reading the paper, referred to the market price of honey in South Africa compared with that in England, and pointed out that the value of money was much greater in this country than in South Africa, which made the relative value of honey approximately the same.

As regards hives, he was pleased to hear that the British W.B.C. hive was preferable to the American. This is what one would naturally be led to expect, in a country where there is such a great range of temperature in the course of twenty-four hours. Hives with double walls, such as the W.B.C., must have a great advantage over the single-walled American pattern.

A gentleman who remarked that he had had some experience in Cape Colony, fully endorsed this view, and said the American hives were not well adapted to the country. What were wanted were hives with an air-space all round the brood-chamber The American hives were miserably made, and not to be compared with those made by English firms.

Numerous questions were asked as to the period of the honey-flow, from which it was elicited that the chief honey-flow occured in the winter. Bees went into a state of semi-hibernation during the very dry summer months, but it was found that the queens were laying practically the year round.

Miss Sillar also said, in reply to questions, that on account of the dryness of the atmosphere, the great variations in temperatures were more easily borne in South Africa than in this country, and consequently they had little trouble with mouldy combs. They had trouble, when a colony became queenless, with fertile workers, and these were much more difficult to get rid of than they were in this country. In a colony under Miss Sillar's observation that became queenless and exhibited the usual signs of the presence of a laying worker, after an interval of five weeks it was found that a fertile queen was at the head of the colony. This was the only instance that had ever come to her notice, of the apparent production of a queen from an egg produced by the laying worker. She could not explain the fact, and regretted she was unable to observe the colony during the five weeks' interval, at which her visits were made.

Mr. Cowan explained to the meeting that the Council had decided to reopen the subscription list in connection with the W. B. Carr Memorial Fund, in order to get sufficient money to cover the necessary expenses for the issue of a gold medal to be competed for biennially. It was not thought advisable to take these expenses from the principal, which was invested, as the interest would no more than pay for the medal itself. A certain amount had already been subscribed, and it was hoped the balance would soon be forthcoming, so that the work could be put in hand.

The Chairman then introduced Mr. R. J. Tabor, B.Sc., of the Royal College of Science, South Kensington, the gentleman whose services the Council had been fortunate in securing to deliver the lecture on the "Fertilization of Flowers," which is one of the series of technical lectures to be given in connection with the Development Grant.

Mr. Tabor dealt with his subject in a very able manner, fully explaining the function of the flower to the plant and the relation of the bee to the flower in such a way that everyone present, even if not well versed in botanical nomenclature, could follow him, and consequently fully appreciate the marvellous structure of the contrivances of the different varieties of flowers designed for the sole purpose of securing fertilization. That bees take a very important part in this process is now well known, and in this connection the observations made by Cecil H. Hooper, of Wye College, were very interesting. He (Mr. Hooper) estimated that the proportions of insects visiting fruit blossoms were as follows: 80 per cent. hive bees, 15 per cent. humble bees, 5 per cent. other wild bees, flies, beetles, &c. These figures should prove to the fruit grower the value of bees in close proximity to their orchards. The peculiar habit of the foraging bee in keeping to one species of flower naturally very materially assists in the pollenisation of the blooms. In 1910 Miss Annie Betts examined 1589 samples of pollen under the microscope from loads taken from the pollen baskets of bees captured on the alighting-board of their hives, and of this number only 144 were mixtures: or a percentage of 9.06 per cent.

In thanking the lecturer, Mr. Cowan remarked that he was very glad the importance of bees to the fruit-grower was now beginning to be recognised. He knew a fruit-grower in California who had forty acres of "Alexander" peach trees, which he complained bore hardly any fruit. On visiting the orchards, he (Mr. Cowan) noticed that though there was a magnificent show of bloom no bees of any sort could be seen upon the blossoms, and advised the fruit-grower to obtain some bees at once. This he did, and through the fertilization of the blossoms by this means, succeeded in obtaining magnificent crops of fruit. To corroborate what the lecturer had said regarding cross-fertiliza-

tion he might mention that it is the practice of American fruit-growers to plant a different variety of tree after every three or four rows, in order to secure this end, and there can be no doubt that the practice has greatly increased the yield and also the quality of the fruit.

In reply to a question as to what varieties were capable of cross-fertilization, the lecturer stated it was obviously necessary to select those varieties which came into bloom during the same period. A report was made some time ago by the Woburn Experimental Fruit Farm giving information on this subject.

At the conclusion of the lecture an "Observatory Suspension" feeder, designed by Mr. R. Grose, of Bodmin, was shown. Mr. Grose claims that with it the bees can be fed without opening or removing the covers from the hive. It can be used either inside or outside the hive, and is specially adapted for feeding nuclei. If used outside it is suspended from a small hook in such a manner that the hole in the feeder comes in alignment with a hole made in the back of the hive, and so it can be replenished as desired without disturbing the bees.

The proceedings terminated with the usual vote of thanks to the chairman for presiding.

THE W. BROUGHTON CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged ...	3	15	0
E. Watson		5	0
B. E. Buckwell		5	0
R. Lee		5	0
J. W. Moir		2	0
	4	12	0

THE NYASA BEE.

By L. W. J. Deuss, Fort Johnson, Nyasaland.

My object in putting these notes at the disposal of the Editor is not to teach others—for that I am not qualified—but to let others teach me how I can avoid the failures I have had, and to draw attention to a bee that through its excellent qualities has won my sympathy. The observations were made at Fort Johnston, on the south end of Lake Nyasa, Lat. 14deg. 28min. 30sec. S., Long. 35deg. 18min. 30sec. E., about 1,600ft. above the sea level. In different altitudes many things might differ considerably.

Even a casual observer of our little friend the Nyasa bee, when it is busy on a flower, must be struck by its beauty in colour and shape. The worker is rather slender and wasp-like, with abdomen more pointed than that of the common black bee. Its length is about the same—a little less than half an inch when hungry, and a little more when full of honey.

The colour of head, thorax, and legs is black, and these are covered with light-yellow hair, with a tinge of red. The first three of the six visible segments of the abdomen are of a beautiful orange colour, with narrow black bands at their bases. The first segment being very small, they appear to have two yellow bands. The next two segments are black, with a bright silver band at the base of each. The last is black. The workers are not very dissimilar to Italians.

This may also be said of the queens. A dead Italian queen I have, is not to be distinguished from one of my dead Nyasa queens. But the queens are not so uniform in colour as the workers. As a rule, they have the first three segments of the abdomen orange, like the worker, only the dark bands at their bases are dark-brown instead of black, and the rest of the abdomen is dark-brown too. A very fertile queen generally has the abdomen so much extended that the yellow joints between the brown segments show and give the whole a brighter appearance. I have one queen that has the whole abdomen yellow, and another that has not even the two orange rings of the worker. Yet their progeny seem to come out all alike. Their bellies are orange in every case, and their legs and feet very dark-red. By the latter alone the queen can easily be recognised when she runs along the excluder at the entrance of a newly-hived swarm that has departed and is waiting for her to follow. The length of the queens is about $\frac{3}{8}$in., but of course, varies considerably.

The drones also vary much in colour and size. Some are $\frac{3}{4}$in. in length, and some only $\frac{5}{8}$in. Perhaps these latter were reared in worker-cells. Head, thorax, and legs are black, with less hair than the worker has. The abdomens of the drones of some colonies are so light that they are not easy to tell from the workers by colour alone, and one of mine last year had drones practically quite black all over. This same colony this year has light drones like the others. They have the brush of hair at the extremity of the abdomen, like all drones in Europe. The segments of their abdomens are generally dark-brown, with a faint light ring at their base.

That my carpenters work within ten yards of my apiary, which is situated direct against the kitchen; that numbers of natives work near it, handling cargo and produce; cats, fowls, ducks, and children play about without interference from the bees, is a surprise to everybody who first sees it, as it proves a sweetness of temper otherwise only associated with Carniolans. Until the hives are full they can be examined without smoker, carbolic

cloth, or veil, provided the weather and time of the day is suitable, and one does not jar them. On a cold, windy day the hives should not be opened, nor after noon, when the sun shines very hot, as then the bees seem inclined to go at sight for the face of the person who lifts their quilt.

At all times they strongly object to certain odours; oil of eucalyptus provokes a furious attack. They will sting the leather strap that carries my watch on my wrist, when they will not worry about my hand. Sweat irritates them, and natives who have partaken of native beer are much stung. Apifuge and muscatel have no pacifying effect on them. Under circumstances, in my apiary, that must be trying to the bees' tempers, I only had two colonies that would sting people, and had to be requeened. This can be done quickly and safely in twenty-four hours, so that the breeding is hardly interrupted, by cageing their queen alone from, say, 9 a.m. to 5 p.m., then replacing her by the new fertile queen in the same cage and place. The next morning, say, 9 a.m., she is released. Their activity is great, and they are splendid honey-gatherers, judging by what they do in this arid place.

The queens are fertile, but are not prone to drone-breeding, nor are they inclined to swarming if they are only given enough room and ventilation. In my hives, which take twelve or thirteen frames, I had only one swarm, and that was because I forgot to remove the division-board and give the bees the last three frames. One of my colonies, though, that built more drone-comb than the others, did not gather *less* honey, but *more*, and did not swarm but filled most of the drone-comb with honey. Thus it is not certain that the building of drone-comb should be objected to.

The brood-nest is usually arranged as in Europe; one or two combs of honey and pollen near the entrance, then from four to six combs of brood, and the remainder honey.

If left without guidance, as in a box with smooth cover, they space their combs 1¼in.

BEES IN NYASALAND.

The writer's native assistant covering up a hive after inspection. He has a veil, but keeps it up for clearer vision, trusting to the bees' good temper, thinking it is time to let the veil down *if* they should show signs of anger. He gets 1s. per month extra for helping with the bees and tells other natives that they are very fierce, lest they might take his job.

I have observed once as little as 1⅛in. But 1¼in. is certainly their rule, indifferently whether the combs contain all worker-brood or drone-brood as well. The thickness of sealed brood-comb varies from ¾in. to ⅞in., not leaving much unnecessary space between the combs, either for the queen or for ventilation.

I have never yet found them build their combs at right angle to the entrance, rarely parallel, but generally more or less in the diagonal direction.

The measurement of the worker-cells in the diameter between two opposite sides I found to vary between 0.188in. and 0.192in. We may thus assume 0.19in. as their normal diameter, against the 0.22in. of "Weed" foundation. The small diameter harmonises with the slender shape of the bee. They will, however, draw out imported foundation readily and breed in it; but if you give them half a sheet, they will, beneath it, continue in their own smaller measurement, after drawing out the foundation in the larger.

It would be an interesting experiment to see if, by giving the bees for several years full sheets of foundation and spacing them 1-7.16in., the size of the Nyasa bee would become larger. I wonder if experiments in that direction with other small bees have been made.

There are 65.6 worker-cells per square inch of comb on both sides together, or about 6,030 cells per frame of 8in. by 12in. internal measurement.

The drone-cells, of which there are hardly more than one-tenth, measure from side to side 0.256in., one-third more than the worker-cells. There are 49.2 per square inch of comb on both sides, or about 4,730 per frame of 8in. by 12in. internal measure. But such a frame as had drone brood only I have not yet come across, except in the honey-combs beyond the brood-nest.

The honey-comb is beautifully white, as they do not quite fill the cells as long as they are not cramped for space, but leave a very small layer of air between the honey and the capping. In this the Nyasa bee compares favourably with the Italian, which seals its cells hard on the honey, and therefore cannot make white combs, and is less suitable for section production. On the other hand, if for any reason these native bees are cramped, be it narrow spacing of frames or that pollen is at the bottom of the cells, they often lay the capping right on the honey, thus making it look dark.

In the choice of their domiciles, our little friends are very casual and often improvident, settling in the dry season where the rainy season will wash them out, or making their home in the rainy season in a place where in the dry season the sun will melt their combs. I have found them in holes in the earth, between rock, between the walls of European houses and the match-lining where they become a nuisance, under a fairly dense bush, under a palm leaf in the open, under a small table on the verandah of a European dwelling house; in fact, almost anywhere, but most often in hollow trees.

The few natives who do keep bees make use of this fondness of the bee for trees. Out of the bark of a tree 1ft. or 1½ft. thick, they make a cylindrical hollow receptacle about 3ft. in length, and close one end with a roll of dry grass; the other end is secured in the same way, except for a small hole in the middle. This contrivance they hang up in a tree, fairly level, near their dwelling huts. According to the season, more or less, soon these primitive hives are occupied by swarms of bees.

To get their product the natives light bunches of dry grass, and more burn than smoke the bees, leaving very few alive. They take the brood as well as the honey, eat both, and spit the wax out and make it into balls 2½in. to 3½in. diameter, and sell these to the European or Asiatic trader.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEE NOTES FROM DERBYSHIRE.

[8582] With the Editor's permission, I will try to give a short account of how bees have fared in this part of the country in this most remarkable year.

My stocks came out fairly well in spring, and although we had some grand bee weather well into May, fruit, sycamore, and hawthorn all blooming freely, the bees never got more than sufficient for their immediate needs; indeed, hardly that, for one stock died out in the midst of it, and I only caught another in the nick of time, while at the same time not more than a mile away, bees were storing in a super.

About May foul brood attacked three or four hives, one in particular did not seem to make any headway. The bees only covered five frames for six weeks, although there were eleven in the hive stored with heather honey. I thought I would give Apicure a trial. In a week's time there

was an improvement, and in fourteen days there was a comb of brood of the most pearly whiteness, side by side with the foul brood, and from that time this stock never looked back. I was looking at it the other day, and the bees have practically cleared every cell of the foul stuff out. Well, I took nearly 30lb. of clover honey from that hive, and it was crowded with bees when taken to the heather. I should like to give a hint to users of Apicure: it will not do bees any good unless they have plenty of stores in the hive, as I will show you by calling this hive No. 1. Another stock that I will call No. 2 had the disease as well; I put Apicure in it. The bees had a small quantity of stores left, and there was nothing coming in. The remedy did not seem to act, and the bees remained on the three frames they had been on for weeks, but there was a difference after I put a frame of new honey in the midst of the brood-nest, and there was soon not a cell of foul brood in the combs, and that is the only hive that stored its brood-combs for winter; they did not put any in the super.

Another stock, which I shall call No. 3, was very badly affected indeed. If I had burnt the combs and bees I should not have lost much, but I wanted to give Apicure a thorough trial. The stock had eleven combs, but only three patches of brood the size of one's hand, and about a capful of bees. For three months they remained in that condition, and for six weeks after I put the Apicure in they never had 1lb. of stores in hand. Occasionally I gave a little syrup, but while the stores were low foul brood was well master of the situation. Then that spurt of honey-flow came on in July, and the stock stored perhaps 5lb. or 6lb. of honey. I have also fed it ever since; foul brood has about disappeared, and it has grown up into a good stock. These instances show plainly that if Apicure is to do any good the bees must have ample stores.

What disappointments we sometimes get with our best stocks. One of mine stood within three feet of the No. 1 stock referred to above, and while the latter was pottering about on five frames, its stronger neighbour was on eleven frames, and the three centre ones were one solid mass of brood from top to bottom. I never saw brood-combs like them. I put on a shallow-frame rack of ten frames and they were soon full of brood, then sections on top. Nearly all the honey gathered during the short flow in July was used in brood-rearing, for the bees never filled one section, though they put a little in them all in one of the racks. In spite of the two supers, on examining the stock I found there were queen-cells in all stages, so they meant swarming, but with that November-like weather setting in on the 18th July, they gave it up, for the ten days that followed would have taken the swarming fever out of a wasp, to say nothing of a bee.

I took the brood combs away from this hive, and let them have the super when sent to the moors, but although such a strong stock the bees did not fill one section with heather honey; they put a little into about twenty. There was about 8lb. of honey altogether, so my promising stock did not get as much surplus as the (No. 1) diseased lot, that never had half the bees in it.

Perhaps, had that good stock been at Anerley (see page 425) results might have been different. I wonder if ever one of those 200lb. a hive honey-flows will visit Derbyshire. We have experienced some very poor seasons these last seven years, but I think 1912 will be the most disastrous, as the bees have bred so few young ones this last two months. I expect there will be many dwindling lots and empty hives in spring. It seems hardly credible that your correspondent at Anerley has taken 50lb. more honey from one hive than I have from fifteen. I had ten of the strongest stocks of bees I ever possessed, but the weather is the sole cause of their failure to store any surplus. For six weeks we never saw the sun shine in a blue sky. From July 16th, when it did appear, it was veiled with a leaden haze. Bees on the heather fared worst of all, out of nine of my best stocks I only got 21lb. in jars and five partially filled sections. Six of the hives came back with less than 4lb. stored, so what little surplus I got came out of three stocks, and two of those were on shallow-frames for brood-combs. Another lot I put on shallow-frames was a hive that swarmed on 29th of July, it had swarmed nine days before, and I returned the swarm. Then, a few days later, I shook all the bees off the brood-combs on to a partly filled shallow super; there would be about 10lb. of bees, and I took that to the moors, but the queen never got mated, and they came back with just about the same quantity of honey as when they went but less bees. What would not that late swarm have done at the heather in some seasons?—T. Sleight, Danesmoor.

TREATING "ISLE OF WIGHT" DISEASE.

[8583] A bee-keeper wrote to me saying that "Isle of Wight" disease had attacked his two stocks, and could I assist? I advised the usual treatment, and offered if no improvement appeared after a fortnight to undertake the case, and the bees might be forwarded to me providing they were *free from foul brood*. An expert who was

called in to examine both hives reported they were now free from foul brood, and they were packed and forwarded to me. On arrival I examined them, and noticed that foul brood was in both stocks, and only one had a queen, a young queen being missing. I promptly cut two pieces of comb and sent them for your opinion, and made a bonfire of the remainder, after shaking off the bees and uniting the stocks together. Both showed signs of "Isle of Wight" disease, one being in the last stages. There was a sour, disagreeable odour, the bees soiling each other, and all had a dull, unnatural appearance. For three days they died very rapidly, but are now completely cured. The queen is laying and bees are taking down syrup still, and carrying pollen on fine days. They will only cover one good frame, so my friend may not expect a strong colony returned in spring. I may say there were nine cells of foul brood in one portion of comb, seven of which were unsealed and in the spore stage. In the other hive were several diseased cells intermixed with healthy brood, which a novice should have detected. In the near future all experts who would pass such combs as being healthy should be made to pay a heavy fine. I do not mind receiving bees with "Isle of Wight" disease, as I don't believe the disease is conveyed from hive to hive by the affected bees. If it was so there would not be a bee in my apiary now, as my hives stand very close together, neither do I burn or bury any dead bees. Any hive which may be affected with "Isle of Wight" disease may first be detected at night from nine to eleven p.m., when an occasional bee will take flight. If this is seen, and the quilts in the hive raised a little just a minute and replaced again, the trouble will not be serious. I have learnt more of this disease at night than in the daytime.—T. Stapleton, Gwinear.

THE W. BROUGHTON CARR MEMORIAL FUND.

[8584] In response to Mr. Herrod's appeal for the W. B. Carr Memorial Fund I have pleasure in enclosing a small donation. It seems a great pity that such an inefficient amount has been subscribed after two strong appeals for this excellent cause.

Every bee-keeper must realise his or her indebtedness to the late Mr. W. B. Carr for the many practical inventions which have come as such a boon to the craft. For instance, how many are there to-day who do not use "W.B.C. metal ends"? Very few; and surely even this appliance alone is worth a great practical appreciation on our part.

The British Bee-Keepers' Association has, after years of agitation, succeeded in getting Government recognition; cannot we, as members of one of the oldest crafts in history, show our appreciation of the good work done, by responding to the appeal for a memorial to one who was a prominent member, and who did so much for the advancement and wellbeing of the industry?

May I suggest that every bee-keeper levy a toll on himself of 1d. per stock and forward same to the Secretary of the Association, and so enable the Council to offer a gold medal *annually* instead of *every other year* as they have, unfortunately, had to suggest?—Basil E. Buckwell, Cobham, Surrey.

A SOUTH AFRICAN BEE-HOUSE.

[8585] The enclosed photograph (see opposite page) shows the smallest of my three apiaries, and, being rather a novel one, it may be of interest to some readers of the Bee Journal. When I first started keeping bees, I kept them on the little hill seen behind the house. Here they were constantly robbed and smashed up by Kaffirs, and as a last resort I built the house. The walls are of corrugated iron, the roof of ceiling boards and malthoid, the front of wire-netting gates, each of which can be opened to slide a hive in or out. The hives stand on a raised cement table, about 2ft. high, behind this is a "walk," about 3ft. wide, so rendering manipulation easy. The house has many advantages, the chief of which are:—(1) The hives cannot be robbed. (2) They are protected from wind, rain, storms, and white ants. It is also much warmer in winter than if the hives were out of doors. The house holds eight stocks comfortably.

All my bees are wild ones, captured in hollow trees, ant-holes, &c. They are not a very good kind of bee, being very vicious, not good honey storers, and unable to make saleable sections, as they have a habit of covering everything with propolis, and making little brace combs from the section to the divider. Honey sells well, both comb and extracted, the latter can always command 1s. 6d. per lb., sometimes 2s., the former as much as 2s. 6d. Disease was unknown in this country till a few months ago, when several of the "shining lights" of the S.A. Bee-keepers' Association (of which I am a member) felt it their duty to fulfil the old adage, *Semper novae ex Africa*. A disease, therefore, put in an appearance, but the English, German, and American authorities were unable to diagnose or classify it, which was cheerful, as we all so much dreaded foul brood, or "Isle of Wight" disease. I have lately met with the disease frequently, but

it seems to be merely nominal; a very small percentage of the brood being affected and causing no real harm to the hives.—R. H. Lownds, Barberton, Transvaal.

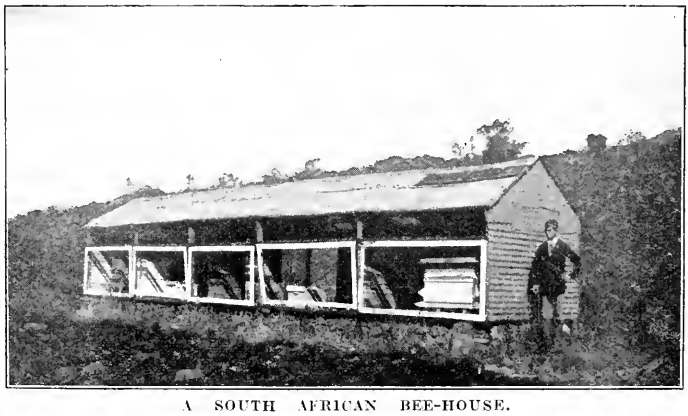
AMERICAN AND COLONIAL PAPERS

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Wintering Bees.—The issue of *Gleanings* for 1st September is a special one, devoted to this subject. It may be interesting and instructive to glean a few facts which may be of service to bee-keepers on this side, as the subject is appropriate at this season. *Tenement* hives are coming into vogue again. The idea is being worked out by many bee-keepers living far apart, and there seems to have been a simultaneous, if not a spontaneous movement on the part of several "forward" men to go back to this principle of wintering. For very cold climates the tenement plan has undoubtedly several advantages. In cellars bees require watching and care to see that the temperature is regulated, and ventilation attended to; but bees, when packed outside, require no further attention during the winter. Working on this plan, the bee-keeper, on the approach of winter, groups his hives into clusters of four, six or eight, and then protects them with an outer case covering the whole group. Here we have the individual colonies without any exposure but the front, or front and one side. Yet in either case the individual warmth of the clusters of the separate hives is conserved and not dissipated by so many outside exposures, while the mutual heat is a benefit to the group as a whole. A weakling, if placed in the centre, will thus benefit, and is more likely to come out strong in spring in both bees and stores. In Canada and the Northern States this system is likely to extend considerably, and it would be a good thing if our bee-keepers would try some experiments to test results.

Mr. Greiner, Northern New York, assembles his hives in autumn into groups of five. Starting with the summer position, when they are in a straight row, he shifts the outside hive of each five a little apart, in order that these bees may mark their location before the second move, when they are placed side by side. Over these separate groups he erects a winter case or shed which is positively water- and frost-proof, allowing from 3in. to 5in. of chaff packing at the sides, and from 6in. to 8in. over the covers. Mr. Holterman, Canada, who is a strong advocate of outer cases, packs as follows: Two hives are packed side by side, and another two also side by side, but back to back with the first pair. Thus two sides of each hive have the best of winter protection; other hives warm with bees. The colonies are packed all round with forest leaves, 6in. at the sides and about 10in. on top—so packed as to afford ventilation, which is of primary importance to insure safe wintering. Although he possesses a splendid cellar, he says nothing would induce him to go back to wintering there, his tenement hives proving so successful in safe wintering. Mr. France, Wisconsin, arranges all his hives in quartettes, and uses the large outer case all the year round. He has the entrances at each corner, and packs liberally, giving 6in. to 10in. of leaves, and these "overcoats" he keeps on well into the spring.



A SOUTH AFRICAN BEE-HOUSE.

The matter of upward ventilation, or sealed covers and ventilation only from the entrance, has been and is now a moot question. For very cold climates we generally consider that upward ventilation plus entrance ventilation, gives better results than a sealed cover and entrance ventilation only. In the milder climates many prefer the last named. In order to winter successfully without upward ventilation, it is well to allow bees to cross over the

frames at will. In this country we rather like to have some species of winter passage across frames in any style of packing, whether it be Hills' device, burr combs, or simply $\frac{3}{8}$in. sticks placed over frames. The space being available in any cold snap allows the bees to follow their stores when the contents of the central combs have been exhausted, and thus many a stock is saved from extinction.

Entrances receive a good deal of attention, but one principle runs through all the plans for regulating the openings, viz., a deep entrance running all the length of the hive is advocated when sealed covers are used, and a shallow space from 2in. to 8in. in length is considered ample where upward ventilation is given. Some still cling to the former method, but year by year more bee-keepers are going over to the side of porous packing, dry forest leaves being generally recommended, as they are cheap and thoroughly efficient.

Laudatory.—The Canadian Bee Journal says: "The name of Mr. William Herrod stands in the minds of the bee-keeping fraternity in Britain for all that is reliable safe, and trustworthy in things pertaining to our craft, and he has had perhaps more experience in showing and judging bee-products than any other in the Old Country. There are therefore few writers better equipped to deal with the subject of 'Producing, Preparing, Exhibiting, and Judging Bee-Produce' than he is, and he has produced a book worthy of a place on every bee-keeper's book-shelf."

Gleanings says: "Almost every department of Apiculture has been represented in books relating to bees except the science of making exhibits of bee-products at fairs and shows, but this field has now been very amply covered in a new work by the junior editor of the British Bee Journal. The author discusses the subject in a most thorough and painstaking way, and American readers will gain from it many helpful suggestions."

The American Bee Journal says: "It is a splendidly written work, with 131 illustrations exhibiting the best methods of preparing bee-produce for shows. We believe it would be well worth the money to our readers."

The *Bee-Keepers' Review* gives the Editor's opinion: "I can without hesitation pronounce it a complete treatise on the subjects named, and it is well worth securing by any one at all interested in bee and honey exhibits. The large number of illustrations which the book contains makes the descriptive matter very clear, by showing in picture what is told in print. As an illustration, a description is given, together with illustrations, showing how to produce special designs in comb-honey, something which is found in many of our State premium lists, but which practically no bee-keeper knows how to produce."

Queries and Replies.

[8563] *Feeding—Flowers for Bees—Average yield per Stock.*—(1) I began, or rather restarted, bee-keeping last spring with all new appliances, W.B.C. hives, &c., &c., and the "British Bee-Keepers' Guide Book" as guide. I have had little or no outside advice, and wish now I had taken *none*. The first lot of bees persisted in swarming, and so often that in spite of the advice of the man who set me up in bees and appliances, after putting them back seven times into the original hive, I placed the swarm in a new hive; it became a thriving stock, and gave me 24lb of nice honey. The bees in parent hive never filled a single section. They dwindled down, and eventually proved to have had foul brood from the first, so I destroyed bees and all the combs and frames. The dealer owns to it, and has offered to re-stock me one hive next year. I have been feeding the strong lot that are on eight full combs and healthy brood, &c. I am told to stop the supply of syrup now as it will do more harm than good. The bees have plenty of natural sealed stores, and are provided with warm quilts. (2) Is it seasonable to plant *Limnanthes Douglasii* or any other early flowers now, indoor or out, for early spring feeding? I want to have long, low borders of good perennials out as early as possible for next season. Can you give a list of the very best for honey and pollen? (3) What is the usual average yield per hive? (4) About what is an average for last bad year all round? — Gwenie Canis, Cowes.

Reply.—(1) You should take off the feeder, and if you have any doubt as to food supply put on a 2lb cake of candy. (2) It is a good plan to plant early flowers for the bees, and if you write to Messrs. Sutton, of Reading, they will send you a special list of flowers for bee-keepers. (3) A good average is 70lb. (4) We should say about 15lb, judging from reports.

[8564] *Drones in October.*—I am sending herewith a queen bee, and shall be very glad if you will say if she is fertile or not. There are drones still present in the hive, and the capped brood-cells seem to be elongated, the cappings appearing to project further than is usual. The drones in the hive, I ought to mention, are small in size; also once or twice I thought I saw young drones in worker-cells. The honey season here has been a bad one. The heather crop was a blank, and we had about five days of bee weather during the clover season. I had

five swarms from two hives. I kept one myself, sold another, and returned the rest. The swarm yielded 20lb. of splendid clover honey, which, I am sorry to say, we have finished to-day. This is my first season, and I intend to go on with my bee-keeping. It is the most interesting hobby I know of.—H. G. B., Huddersfield.

REPLY.—The queen is an unfertile one. All the abnormal conditions you mention are attributable to this fact.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Elementary School Bee-keeping (p. 374).—Whilst undesirous of taking from the credit of the bright boy who suggested more ventilation as a deterrent of swarming, I am inclined to think that the headmaster at Tipton rather jumped to the conclusion that the second hole in the roof acted like magic. Is it not more likely that the advanced season, and a slackening of the flow, were considerable causes? At any rate, most of the swarms which issue from frame-hives do so in spite of the roofs having this provision, and it will not be surprising if the same hive produces a swarm next year! Ventilation is undoubtedly an important factor, but it is probable that its deterring influence is largely due to the cooling of the hive during the night.

"Isle of Wight" Disease and Alighting-boards (p. 384).—This is a point I have not noticed previously. Undoubtedly it is not good that diseased bees should crawl back into the hive. Neither is it good that they should crawl about the apiary. I wonder whether a box placed at the front of the alighting-board would trap them. Such a box made of zinc, with inward-sloping sides and perforated bottom, might do.

Angry Bees (p. 387).—This statement was borne out by Miss Sillar at the recent conversazione. Possibly the "fiendish" bees protect themselves better against the attacks of their many enemies. Of course it is impossible for us to judge of South African bees or bee-keeping from our home experience.

We all (p. 387).—The use of this phrase is an Americanism, and must not be taken to mean that all Californian bee-keepers use quilts. But the advantages of the quilt are so great that I cannot see why it is not generally adopted. Apart from the ease of opening up the hive the light quilt and ventilated roof would greatly help the shade problem, being certainly cooler than a sealed roof, however thin.

Value of Good Queens (p. 388).—Here in a nutshell is the argument for requeening: Very few of us have queens so good that they will head the poll for two seasons, so that the simple and cheap solution of the difficulty is to work them hard for one season, and requeen annually. The cost of such queens, even if purchased, should be more than repaid in the yield, for, presuming that manipulation and queen-driving pays, it is unlikely that the process can be profitably carried out for two consecutive seasons. In any case, a young queen responds more readily to such methods, so that if we take this for granted we have the extra yield for two years to set against the cost of a queen, supposing that requeening is undertaken annually instead of biennially. Most bee-keepers, however, particularly those whose experience does not extend to queen-rearing proper, would profit by the requeening of backward stocks from the first hive to swarm, and they might well make a practice of breaking up this stock into nuclei, requeening the poor stocks as the queens become fertile.

A Drone Sieve (p. 388).—The labour involved in this operation is surely more costly than the apparatus of an automatic drone-catcher, for the operation would probably need repetition, and disturbance to stock is represented by a diminished yield of honey.

Unhealthy Pollen (p. 393).—D. M. M.'s evidence rather bears out what Mr. Tilley preaches as to the necessity for fresh pollen. It does not prove that the bees were suffering from "Isle of Wight" disease, but the symptoms are so like as to be very easily confused. By the way, those Scotch potatoes must be a hardy variety if they do not usually suffer from frost whilst carrying green tops right through August. About that time in this district it was difficult to find a potato-leaf at all, and the potatoes themselves were mostly not worth digging. Can you supply us with seed tubers, D. M. M.?

An Unknown Sense (p. 394).—Is it really necessary to ascribe sense of location or power of orientation to an unknown sense, using the term in the sense of a power unpossessed by ourselves? I venture to suggest that it is not. In the case given by Humble Bee, there was so little difference in the surroundings that it would almost have required an increased or additional sense to immediately adapt the acquired knowledge to the trifling circumstance. Let us suppose that our own working life is of only a few weeks' duration, and during that period we have made numerous incidental journeys to and from our door. Let us suppose that we are intent upon our work and in a great hurry. Let us suppose that our door is one of a row, and that there is a well-marked path leading to it. Should we not be confused by miraculous alteration? Let us further suppose that thousands of us live in the one house. Should we not be likely to make for the crowd of confused

and gesticulating inmates, our own apparent confusion being prolonged by them? Suppose further—a risky supposition—that the intelligence of the bee is more limited than our own, and it appears reasonable in their case. The suggested path consists, no doubt, of objects either on or above the ground, individual bees no doubt possessing their own lines of convergence.

BARNET AND DISTRICT B.K.A.

A series of three lectures on bee-keeping, given by Mr. W. Herrod, have been held at Barnet during the month of October. In spite of each evening being wet, the very good attendance at each proves the interest aroused in the subject, a noticeable feature being the number of young people attending, and that the interest was not transient is shown by the same people coming to all three lectures and the numerous questions asked at the close of each. The Rev. W. Manning presided at the first meeting, Mr. P. W. Jefferies at the second, and Mr. G. Tarring Flashman at the third. On the conclusion of the last lecture Mr. Flashman, in asking those present to join him in a hearty vote of thanks to Mr. Herrod, remarked that he had not for very many years attended lectures so interesting, their chief charm, to his mind, being the simple language in which they were expressed, enabling the very youngest present to clearly grasp the meaning. Mr. Herrod briefly replied, saying that the attention paid to his remarks amply rewarded him. After the meeting a hope was generally expressed that the Association might obtain Mr. Herrod's services for a further series.—G. James Flashman, Hon. Sec.

BEE PLANTS.

It seems remarkable that many who have good-sized gardens, and keep bees with the idea of taking from them periodically many pounds' weight of honey, should take little or no pains to provide them with means to obtain the necessary ingredients in or near their own homes. There can be no reason why honey-producing flowers should not be grown in plenty, if not by the owners of the bees, at any rate by some more happily-placed neighbours.

White clover is in this country, perhaps, the most valuable honey-producing plant. It continues a long time in flower, and yields a large quantity of a rich, transparent honey of excellent flavour. Heather is perhaps next, and large quantities of moorland honey are collected from the tiny blossoms through August and September. It has a peculiar flavour, which some do not like, and is dark in colour. There are other species of heather which bloom in winter and early spring. One especially that bees are very fond of is the Moorish Heath Erica carnea, which thrives in ordinary garden soil. Then follow the crocus, wallflower, and some kinds of willow, which yield both honey and pollen; also the flowers of the gooseberry, cherry, plum, pear, and apple, all of which are rich in honey of the best flavour. Before the apple blossom fades the sycamore produces its flower, which is very much resorted to, as the honey seems to lie on the bloom, and is clammy to the hand. This fills the interval up to the blooming of the white clover. Field beans are only resorted to by very strong bees; field mustard yields a honey which quickly crystallises; mignonette is a favourite garden flower, and so is borage; both of these are readily raised from seeds, as also are the following: Rosemary, centaurea cyanus, turnip, cabbage, broom, gorse, mallow, bokhara clover, bird's foot trefoil, buckwheat, hollyhock, vipers bugloss, thyme, sweet alyssum, balm, basil, marjoram, savory, stocks, solidago, cerinthe, sweet scabious, phacelia, and the autumn flowering sedum spectabile. Among shrubs and plants, berberis, daphne mezereum, ribes, veronica, syringa, sweet briar, Japanese rose, lime, and heliotrope.—*West Somerset Gazette.*

Bee Show to Come.

November 5th and 6th, at Brighton.—Annual Show of the Sussex B.K.A., in connection with the Brighton, Hove and Sussex Horticultural Society's Chrysanthemum Show, to be held in the Dome and Corn Exchange, Brighton. Five open classes, including one section and one bottle. Seven Members' Classes. **Entries closed.**

Notices to Correspondents.

J. W. (Reigate), G. W. C. (Heighlington), and others.—*Stingless Bees.*—Thanks for cuttings. We do not attach any importance to the matter, however.

W. W. L. (Dunster).—*Syrian Bees and Queenlessness.*—It is not a special trait in the character of Syrian bees. The same thing happens with blacks sometimes.

Radnorian.—*Buying Bees.*—It would be better for you to wait until spring, and start with a new hive and a swarm. You might purchase the hive in the meantime, and paint it as described in "Helpful Hints for Novices" (page 425).

Honey Samples.

X. Y. Z. (Kent).—Sample is good in colour, but very thin, and spoilt in flavour by ragwort.

Editorial, Notices, &c.

HONEY SHOW AT KILMARNOCK.

Considering the adverse bee season, the display of honey and bee products at the Ayrshire Agricultural Show at Kilmarnock, on October 24th and 25th last, was a very creditable one. Heather honey was not as well represented as usual, on account of the wet weather, and some of the exhibitors had spoiled the flavour of their honey in trying to secure density by over-heating. The judge, Mr. J. Dickson, made the following awards:—

Six 1-*lb. jars of extracted honey* (24 *entries*).—1st, Peter M'Donald, Car Road, Cumnock; 2nd, A. F. Borland, The Knowe, Cumnock; 3rd, John Henderson, Car Road, Cumnock; v.h.c., John M. Stewart, Mollance Gardens, Castle-Douglas; h.c., J. Pearman, Penny Long Lane, Derby; c., James Halliday, Slogarie.

Six 1-*lb. jars of extracted heather or mixed honey* (9 *entries*).—1st, Peter M'Donald; 2nd, A. White, Lyndhurst, Cumnock; 3rd, A. F. Borland.

Six 1-*lb. sections* (13 *entries*).—1st, A. White; 2nd, John Brown, Balmoral Road, Dumfries; 3rd, John Ross, Sunnyside, Dumfries; v.h.c., Alex. F. Borland.

Six 1-*lb. heather sections* (5 *entries*).—1st, Joseph G. Nicholson, The Apiary, Langwatby; 2nd, James Halliday; 3rd, Peter M'Donald.

Six 1-*lb. jars of granulated honey* (11 *entries*).—1st, John Duncan, Burnhouse, Galston; 2nd, Robert Steven, Irvine Road, Kilmaurs; 3rd, William Manson, Whitehall, Maybole.

Beeswax (10 *entries*).—1st, John M. Stewart; 2nd, John Rowlands, Moss Apiaries, Pwllheli; 3rd, John Ross.

Three 1-*lb. jars of extracted honey*; *competition limited to Ayrshire* (13 *entries*).—1st, John Henderson; 2nd, D. M'Vey, York Place, Troon; 3rd, Robert Steven.

Three 1-*lb. sections*; *competition limited to Ayrshire* (9 *entries*).—1st, A White; 2nd, John Henderson; 3rd, Alex. F. Borland.

Two 1-*lb. jars of extracted honey* (21 *entries*).—1st, Peter M'Donald; 2nd, Alex. F. Borland; 3rd, John Henderson.

Two 1-*lb. sections* (12 *entries*).—1st, John Ross; 2nd, A. White; 3rd, John Brown.—(*Communicated.*)

LEICESTER AND RUTLAND B.K.A.

AUTUMN CONFERENCE.

The Leicestershire and Rutland B.K.A. held an autumn conference on October 22nd last, at the Higheross Restaurant, Leicester. Mr. A. E. Biggs (chairman of the association) presiding over a large attendance of members from all parts of the county.

Mr. Faulkner and Mr. J. Waterfield (secretary), and the chairman presented their reports as delegates to the recent meeting and conversazione of the British Bee-keepers' Association, and spoke of the progress which the association is now making.

Certificates were presented to the following members who successfully passed the third-class examination of the B.B.K.A.: Messrs. W. Baum, J. Hunt, A. Meadows, W. H. Wood, and E. Wheatley.

The chairman also presented the medals and prizes won at the Abbey Park Show.

Mr. W. Herrod, F.E.S., secretary to the British Bee-keepers' Association, spoke on the work of the association, and answered several questions.

After tea a most instructive lecture was given by Mr. W. Herrod on "Diseases and Enemies of Bees," with special reference to the "Isle of Wight" disease. The lecture was illustrated with excellent photo-micrographic lantern slides and specimens, and was thoroughly appreciated by the meeting, many members expressing their indebtedness to the lecturer for the valuable information on the subject of disease they had received. —J. WATERFIELD, Hon. Sec.

AMONG THE BEES.

By D. M. Macdonald, Banff.

THE BEE DISEASES BILL.

"There is nothing new under the sun"; and yet if we go back to the very *origo* of bee-keeping we cannot find a "Bee Diseases Bill." It is well, therefore, to seize the opportunity and deal with this *original* something in the history of apiculture; and this is the more necessary because, very shortly, it will have disappeared from our ken, having then passed its period of metamorphosis and become an Act—which is a consummation devoutly to be wished. I have been much struck by the unanimity with which our members of Parliament favourably received the Bill. The First Reading was carried *nem con.*; the Second Reading was unopposed, any little exhibition of disapproval being confined to a plea for time in considering it in committee. This no bee-keeper will grudge, as there is no desire to rush it through; indeed, I find that members of the Standing Committee desire to give it, clause by clause, the most patient consideration. Our county member is on this Committee and he is anxious, while favourably disposed to the Bill as it stands, to obtain particulars of any amendments, alterations, omissions, or additions that would aid in bettering it. Personally, I would be very chary of suggesting many amendments, as any overweighting might be looked on as obstruc-

tion, when time is so limited at this late period of the session.

Having been in communication with Northern county M.P.'s, I am able to state that all are cordially in favour of seeing the Bill passed. I have had no unfavourable reply out of over twenty, and most are quite enthusiastically in its favour. From their replies I will select a few extracts:—(1) "I will certainly vote for the Bee Diseases Bill whenever the opportunity arises. We have had some experience of it in the county, and I have been in communication with those interested." (2) "Many thanks for your letter, which contains much interesting information, and anything I can do to further the interests of bee-keepers will be done." (3) "You may be quite sure I will do all in my power to get a Bill passed to deal with the bee pest. For two years now I have been hammering away at the Board of Agriculture on the subject." (4) "I shall be only too pleased to be guided by you on a subject which you have made your own." (5) "I will do all I can to forward your wishes, and aid in passing the Bill." (6) "You may certainly rely upon me supporting any Bill to protect bee-keepers against bee diseases." (7) "I shall certainly support the passage of the Bee Diseases Bill, and from what passed in the House the other night, I don't think there is likely to be much opposition. Such criticism as there was, was almost entirely on the ground that there had not been sufficient notice. The Bill seems to meet with general support." (8) "The Bill was read a second time last week, and was sent to the Standing Committee. I have no doubt it will become law before the end of the year, certainly before next spring. Of its need no one has any doubt, and we can only hope it will be effectual. So far as I can, you may rely on my doing my best to get it through." (9) "The Bill has now been read a second time. I am in full sympathy with its objects and you may depend that in its further stages it will receive my hearty and active support. I shall do whatever I can to further its passage into law." (10) "I must confess I am not familiar with the terms of the Bill to which you refer, but I will now look into it, and give the subject my most careful attention."

The foregoing will serve to show how members of Parliament are on our side. Now, I would turn to the pages of the British Bee Journal. I have glanced over the recent issues following that of August 1st, in which appeared a copy of the Bee Diseases Bill, and I am pleased to find that there has appeared practically no adverse criticism, which is just as it should be, for its passage will mark an epoch in bee-keeping, and crown the strenuous efforts of well-nigh twenty years to secure legislation.

One or two have tentatively expressed a desire for the preservation of the seeds of disease in our midst after the Act is passed, on the plea that we might secure immune bees. My own opinion, founded on three years' battling with the fell scourge is that we will obtain this "when the pigs begin to fly." So-called cures were (with me) like the application of so much dirty water. I found no immune bees. Some have cured stock (temporarily, I presume), and some record that they were able to obtain bees with a semblance of immunity. Even, although a few scores or hundreds in a stock survive, and are declared immune—*cui bono?* The members of that stock, even those believed immune will almost certainly act as "*disease carriers.*" Dr. Graham Smith considers them only "partially immune to even the strain of Nosema, with which they were affected, although possibly *not to more virulent strains.*" He, too, thinks "they are capable of infecting non-immune stocks." I consider any stock harbouring the disease will act as not only a future breeder of the disease, but also as a "parasite carrier," therefore, and remembering that perhaps nineteen out of every twenty bee-keepers are totally unfitted for experimentation, I would have no reserve in the Bill.

I whole-heartedly subscribe to the dictum of Messrs. Muir, Kirkcowan, to be found on page 387 of the Journal for September 26th. "Treating them was so much labour lost; it had no effect." They lost 180 stocks in two years, and all neighbours lost their bees. Now they have taken *the only cure*; they have *killed off every stock*, and are to start anew next year.

"He laughs at scars who never felt a wound." The bee-keeper who never had this pestilential scourge in his apiary knows nothing about it.

THE NYASA BEE.

By L. W. J. Deuss, Fort Johnson, Nyasaland.

(*Continued from page* 434.)

Europeans who keep bees here number, I understand, seven or eight, a large proportion in a population of 500. Some are rather casual in the way they keep them, others use proper frame-hives. As there are not two together in one place, little would be gained by having standard sizes, as long as those who use frames at all, use the same frame all round.

My hives are an evolution of those much used in Algiers; they can be made by a native carpenter very quickly and cheaply, and seem to suit the bees admirably.

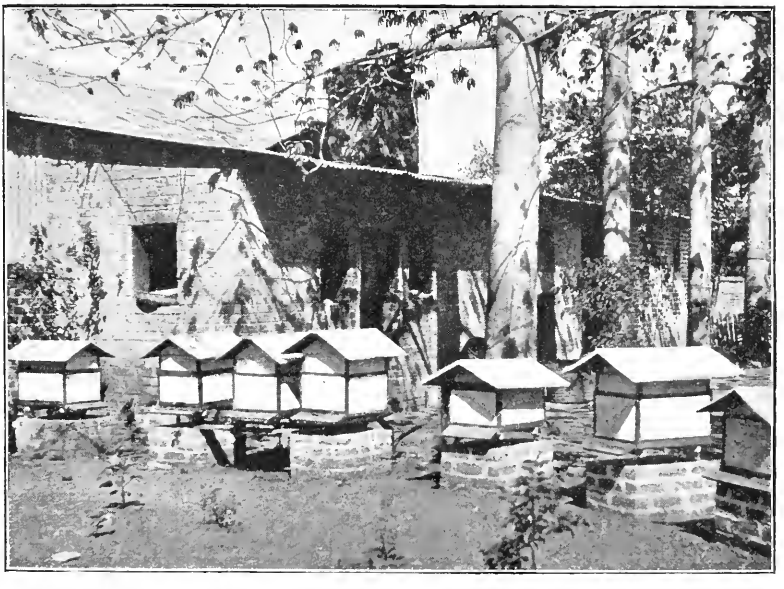
The two largest boards of a paraffin

case that has been dried thoroughly in the sun to remove the smell, are taken off. Two laths of 2in. and four of $\frac{1}{2}$in. are cut from these. The 2in. laths are nailed along the top of the longest sides, so that they protrude above by 1in., the $\frac{1}{2}$in. laths are nailed along the remaining sides of the same boards of the case. Then the remainder of the removed boards or as much as is required to be level with the inner wall above, and go an inch below it. Thus we have two walls with an air space of the thickness of one wall between, or a total thickness of $1\frac{1}{8}$in.

The short sides of the case remain as they are, being thick enough anyhow. The floor-board and roof are made to fit, and

The frames are made to suit the box, and an extractor (Cowan geared) and the hive at the same time. They are only $8\frac{1}{2}$in. deep, thus leaving quite an inch between them and the floor-board. This facilitates access to the farther frames for the bees, and also gives ventilation; dampness need not be feared in this dry climate. Hitherto, the bees have never built under the frames, but should they do so, another layer of boards will prevent it.

The top bar is $1\frac{1}{4}$in. broad, and has near either end, but at opposite sides, broad-headed tacks protruding $\frac{3}{16}$in., thus making a cover of wood for the colony, with just enough space to let the bees go



GENERAL VIEW OF MY APIARY.
The Nyasa Bee.

the complete hive is shown in the accompanying illustration of my apiary. The body-box takes thirteen frames, running parallel with the short side. The entrance may now be made on one of the short sides, or on one of the long sides, just as suits the bee-keeper best. The photograph shows both kinds together in use, though the writer prefers those with the frames running parallel to the entrance, as it leaves more space to pass between the hives. The floorboard rests on three stout nails; all legs must be put into tins of castor oil mixed with a little paraffin to keep ants off the hive. Carbolic acid is expensive, and will dry up, so will paraffin alone, and if water is used the little pests make a bridge with their bodies and walk over.

into the super and keep the queen down, doing away with the necessity and inconvenience of an excluder.

The roof has very broad eaves to protect the hive from the sun, and the entrance from rain. It is covered with calico, and then the whole hive is painted white to reflect as much of the heat as possible, except the alighting-board and the edges of the box, which are green. My friends all consider the hives a great ornament to my place.

The broad tops of the frames give the bees practically a wood cover, which is the natural thing for them, and also there is less quilt to propolise or bite through, as they sometimes do. They do not seem to appreciate the porosity of the quilts,

otherwise they would not attempt to make them air-tight with propolis.

The quilts I use are made of waste cotton-cloth of any kind, and cost practically nothing; preferably sample pieces of native blankets sewn together for the purpose. The super takes the same frames as the body-box, and is of obvious design.

The whole hive, including three coats of paint, carpenters wages, and supers, does not cost over 10s., and much less when the same native carpenter makes a number of them instead of one.

In Nyasaland the bees work practically the whole year round, and I will now give a list of the plants on which they were observed at Fort Johnston, and the months of the year of the beginning and end of their respective honey-flow.

HERBS.

(*a*) INDIGENOUS.

Name	from Month.	to Month.	Observations.
Thsetseresi	12-1	4-5	Creeper with thorny seed.
Nambenau	12-1	4-5	Weed with small flower, and a seed that sticks to ones clothes.
Kapande	12-1	3-4	Creeper spreading on the ground.
Madodochi	1	7	Creeper, or long growth. The fruit is eaten by natives. Cucumber
Maungu	1	6	Native Pumpkin.
Sira, also called Luni	2	5	*Cruciferæ*. Similar to Mustard.
Mapira		6	Kaffir corn, millet, pollen.

(*b*) IMPORTED.

Gonzalin (Gonzalinho)	1-2	4-5	*Cucurbitaceæ*. Creeper of enormous growth with fine eatable fruit.
Morning Glory	4	5	*Convolvulaceæ*. Fine flowering creeper.
Sun Flower	1-2	6	Requires several sowings to flower so long a per od.
Petsai, Chinese Cabbage	6-7	8-9	Fine vegetable, of easy culture.
Lettuce	1	12	Frequent sowings required to flower for any length of time.
Mignonette	5	7	
Basilicum	4	7	Easy culture.
Sage	4	7	

TREES.

(*a*) INDIGENOUS.

Pingwe	1	2	African Ebony; thorny bush *Papilionaceæ*.
Banana	1	12	Some plants may be found in flower at any time of the year.
Mtawa	1	12	Some plants may be found in flower at any time of the year. A kind of Ficus.
Chamwamba	3-5	8-11	
Asalzu, Mazowaza	4	5	*Euphorbiaceæ* Bush.
Mvunguti, Sausage Tree	8-9	9-10	Short but abundant flow.
Mpechesu	9	9	Short but abundant flow.
Mlambi, Boabab	11	11	

(*b*) IMPORTED.

Ceara Rubber	1	4	Believed to give bitter honey.
Papaya, Pawpaw	2	3	Male plant for pollen.
Agava Sesal	6	8	Agava Mauritius not frequented by bees, but by honey birds and butterflies in January & February.
Kapok. Tree Cotton	8	9	*Eriodendron anfractuosum*.
Grevillea robusta	9	12	
Lemons	9	11	
Yucca	9	11	
Eucalyptus globulus	10	12	
Custard Apple	10	11	
Cactus	10	3	Grown for its fibre.
Gwavas	11	12	
Datura	11	7-8	

The vegetation and the life of the bees is, of course, dependent on the seasons, which are somewhat erratic in their dates of beginning and ending, and are by no means of equal length. It is usual to distinguish only the rainy season and the dry season, but for our purpose we had better distinguish four:

1. *The rainy season*, beginning between late February and early January, and ending in April or May.

2. *The cold season* follows the former, and lasts till July or August.

3. *The warm season* follows the former and ends in October.

4. *The hot season* follows the former, and lasts to the beginning of the rainy season.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ARE CYPRIAN BEES IMMUNE FROM DISEASE?

[8586] I mentioned in a recent article in these pages that a strain of bees already existed that was for all practical purposes immune from the "Isle of Wight" disease, and I may also say from brood diseases.

I have for many years been aware of the superiority of Cyprian bees in this respect. My first Cyprians were obtained from Mr. D. A. Jones' importation at the time he and Mr. F. Benton returned from the East, where they had been expressly to find new, and if possible, better races

of honey bees than were already known in America.

The venture was not a profitable one, but for some years thereafter there was a fashion in Cyprians, Syrians, Holy Lands, and some others.

The Cyprians perhaps stayed in favour somewhat longer than the others named, largely because they were docile when honey was to be had, while Syrians and Holy Lands were too irritable at all times to allow of them being made useful.

A bee-keeper in Texas was reported to have secured one thousand pounds of honey in one season from a single colony of Cyprians; but when one happens to know that pure Cyprians are not heavy honey gatherers, although active and strong on the wing, we can only conclude that the bees were a cross between Cyprians and some other variety, supposing such a record to rest upon fact.

I have known a cross between Cyprians and Italians to produce over 350lb. of honey, but there were grave reasons why Cyprians did not become general favourites. It was found that when young queens became mated to native drones, as usually happens in the average apiary, the owner had a hornet's nest to deal with, and he wished for a coat of mail every time he tried to handle them. Ligurian hybrids were playful kittens compared with the little demons that would penetrate his ordinary armour with a thousand javelins.

Nevertheless, if the apiarist can control the mating of his queens, crossing the Cyprian queens with pure Italian or Carniolan drones, he will in the first cross find the same immunity from disease, while the workers will be quite gentle and first-class honey producers. The Carniolan cross is, of course, best for comb honey, while the Ligurian cross is all right for extracted honey, and may pass fairly well as regards the comb sealing.

On one occasion, some years ago, I purchased over thirty stocks of Cyprians, so-called, but they had been crossed with Italians, and were larger than pure Cyprians. Their temper and working qualities were everything that could be desired, but the important point is that though foul brood was chronic in that neighbourhood, upon examination I found no trace of disease, and was assured these bees had always been free from any complaint.

My clients have frequently asked me for Cyprians mated with Carniolan drones, but this cross is very rare. Italian drones from imported stock are usually outstripped by native drones, but Carniolans are more sluggish than the Italians, and consequently I ceased to offer that combination.

Cyprians, as a pure race, will not be of much value, and if home-reared queens were offered indiscriminately the purchasers would find they had on hand something almost worse than the disease they hoped to subdue by using them.

Pure Cyprians fail to cap the stores fed to them for winter use, while their comb honey produced in summer is unsaleable as such, because the cappings are close on the honey, presenting a thin, watery, and dark appearance. They use a great deal of propolis, and are prone to start any number of fertile workers in the absence of a queen, and often when they have one. Consequently, these undesirable features will be largely inherited by the workers when crossing other varieties with pure Cyprian drones.

These bees are certainly worth a trial where the mating of the queens can be restricted to drones of the above-named gentle varieties, and while admitting the possibility that they may contract the "Isle of Wight" disease, they will not succumb under its influence where slight attention is given, as a number of reports show.—SAML. SIMMINS.

THE HUMBLE BEE.

[8587] You have done me too great an honour to ascribe the photographing of the coloured plates in *The Humble Bee* to me. I merely arranged the specimens. The photographing and reproduction work were done by Messrs. E. Sanger Shepherd, Ltd., and I am glad to be afforded this opportunity of saying so, because the name of the firm is not mentioned in the book, and the work is of high merit, the humble bees being life-like and perfectly true to nature, which would not have been the case had the engravings been made from paintings in the ordinary way.—F. W. L. SLADEN, Ottawa.

DUTCH BEES.

[8588] Those of your readers who have suffered from the ravages of *microsporidiosis* in their apiaries, will probably be thinking about making a new start next spring. Interest in this connection will be aroused by a communication received from a correspondent who asserts that the Dutch bees are free from disease. This pronouncement is based on personal information given by Mijnheer Löhnis, an official highly placed in the Dutch Ministry of Agriculture; further, on a statement made at the State Serum Institute, at Rotterdam, to the effect that investigation on bee diseases is impossible owing to lack of material; and finally on information in a letter received from the editor of the *Maandschrift voor Bijenteelt*, who writes, "Diseases are *unknown* in Holland."

A bee-keeper in England, who over a year ago imported some Dutch bees to replace colonies which had been wiped out by disease, reports them vigorous and hardy, and strong breeders, with an only drawback of constant swarming, which results from the last-named characteristic. They are flourishing in a neighbourhood which had its hives devastated by *microsporidiosis*.

Such evidence seems to make it undeniable that the Dutch bees are trustworthy and full of energy; and it indicates the direction whence fresh blood may be introduced with great expectation of successful results.—P.S., London, S.W.

A LATE COLONY.

8589] It is November 3rd, and all the other stocks in the village appear to be sound asleep, and not a single bee is out of the other hives. They had a "play" a few days ago, and can remain indoors for a month, if no warm day comes sooner. One colony, however, is quite hard at work. The legs of returning bees are yellow with pollen, or chocolate-grey with what may be either pollen or propolis. This hive is tenanted with bees driven very late—at about the middle of October—and fed late. In fact, there is a feeder on now simply because the bees enjoy it, whereas other stocks cease to take the syrup when they have had enough. Everyone, of course, will shout "Fie upon thee!" but I think these bees must still be raising brood, and I shall cease to feed them in a week.—G. G. Desmond, Sheepscombe, Glos.

THE "W. B. C." MEMORIAL FUND.

[8590] I am only a village cobbler, though I was in business for twenty years in West London.

I have no bees, but hope to get some, *if* I can get work. I have only read the British Bee Journal since August 26th, 1912, so I am a novice, but very anxious to keep some bees next summer. I shall make some hives during the winter, hoping I shall have use for them. I have no spare cash to send to the "W. B.C." Memorial Fund, so send a volt meter, one I used when life was more hopeful. Perhaps you can sell it for a small sum, and put the money to the fund. Please don't laugh at my mite; I can do no more. —A Village Cobbler.

[That there are some people who appreciate the work of one who has gone to the "Great Beyond" is shown by the above letter. Far from feeling amused, we appreciate fully the sentiment which has prompted the gift. The donor is too modest to give his name or the slightest intimation of his residence, but we assure him that the feeling which prompted his donation is of more value than many pounds. We shall be pleased to receive offers for the meter and will send it on approval.—Ed.]

"HURRY UP!"

[8591] I have, of course, already contributed to the "W.B.C." Memorial Fund, but I gladly adopt the suggestion of Mr. Basil Buckwell, and enclose 1d. per stock in six 1d. stamps. Were every bee-keeper to follow suit at once, our excellent object would soon be accomplished. —E. D. Till.

W. BROUGHTON CARR MEMORIAL FUND.

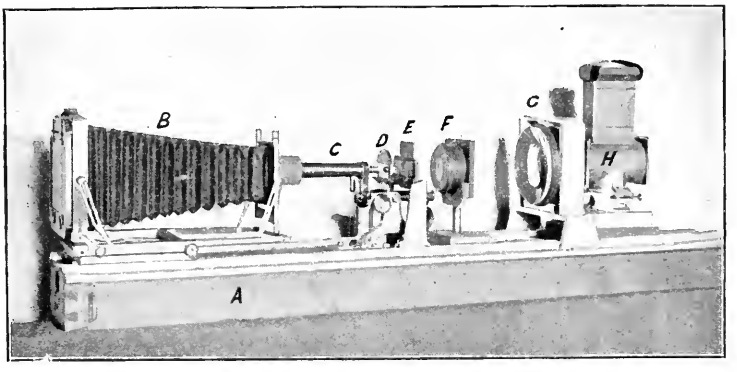
	£	s.	d.
Amount already acknowledged ...	4	12	0
Sir Ernest Spencer	1	1	0
W. F. H.	0	2	6
J. C. Roberts	0	2	0
E. D. T.	0	0	6
R. Litman	0	0	6
	£5	18	6

PHOTOGRAPH THROUGH COMPOUND EYE OF A BEE.

Mr. Watson, the author of the curious photograph on opposite page, is an amateur photographer of over fifty years' standing, and although he has dabbled in most of the known photographic processes, had not given serious attention to photo-micrography until asked last year by a friend to make some lantern slides from microscopic objects for the purpose of illustrating a lecture upon "Bee-keeping as a Hobby." The lecturer, Mr. James Bancroft, of Acton, an enthusiastic amateur bee-keeper, whose portrait we give upon page 448, intimated, more by way of a joke than seriously, that he would like to have a slide of himself as seen through the eye of one of his bees. Mr. Watson set to work, however, and produced the desired slide. As the lecture was delivered several times last winter, it is possible that some of our readers may have heard it and have seen the slide. Mr. Watson has since remodelled the apparatus with which he made the slide, and has now obtained a much better result, which we are able to show in the reproduction of his latest photograph.

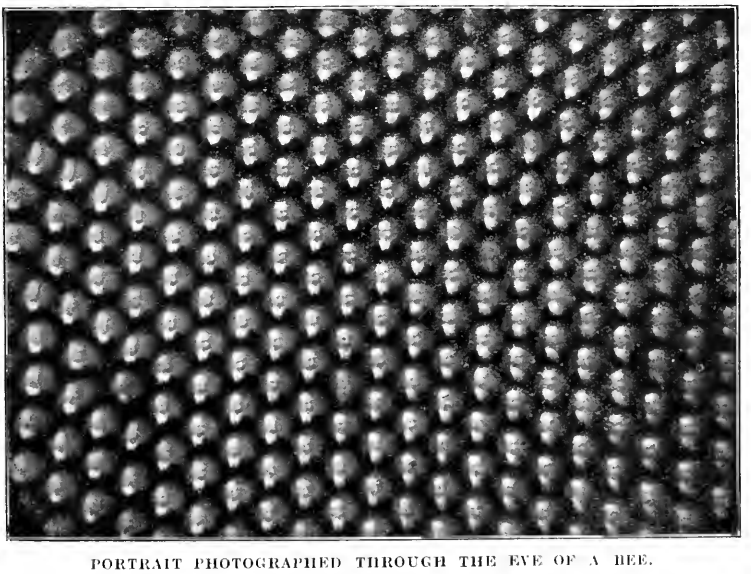
Our readers are aware that the compound eye of a bee is protected by a quantity of minute hairs which grow upon the framework forming the hexagonal

facets of the cornea, or outer covering of the eye, and that each hexagon contains a lens similar in shape to a magnifying glass. To obtain a portrait of Mr. Bancroft was simple enough, as was also the procuring of a few of Mr. Bancroft's bees and dissecting some of their eyes; but setting up an eye so that the portrait could be seen through it and photographed was a somewhat different matter.



APPARATUS USED IN TAKING THE PHOTOGRAPH.

First a dissected eye had to be mounted so that it could be placed upon the stage of a microscope for observation. Next, a transparent positive, on a reduced scale, of the portrait had to be made to be seen through the eye. Then an apparatus was



PORTRAIT PHOTOGRAPHED THROUGH THE EYE OF A BEE.

necessary for enabling a strong light to be thrown through the portrait and the eye, on to a sensitive photographic plate.

Reference to the illustration of the apparatus employed will explain how this was accomplished. A is a strong stand or bench made so that a camera, a microscope, stands, carrying lenses, &c., and a lamp, can be made to slide to and fro in a straight line, and can be fixed at any point. B is a camera having a good stretch of bellows. The lens is taken away from the camera, and a collar for making a light-tight joint with the microscope C is substituted for it. The bee's eye, mounted on a slip of glass, is placed on the stage of the microscope at D; and the portrait, carried on a stand which can be moved to and fro, is at E. F is a lens for condensing, or concentrating, the light upon the portrait. G is a collecting lens, and H is a kerosene lamp containing multiple wicks. The light from the lamp passes through the lens G, which converges the beam of light upon the lens F; this lens further concentrates the beam upon the portrait and the eye. The microscope is adjusted so that the facets of which the

eye is composed, or rather such as come within the field of the lens of the microscope, are distinctly shown upon the ground glass focussing-screen of the camera. The fine focussing arrangement of the microscope is now operated carefully until the portrait is seen through the facets of the eye, and then, by means of the slide which carries it, is adjusted so that it may be seen to the best advantage. A sensitive photographic plate is now substituted for the ground glass focussing screen, and an exposure made in the usual manner.

Objects have been seen and photographed through the eyes of insects before this, particularly the eye of the great water beetle (*Dytiscus Marginalis*), but we are not aware that the eye of a bee has been employed for the purpose, and we believe that we are the first to reproduce such a photograph. The hair upon the

THE PORTRAIT OF MR. JAS. BANCROFT.

external surface of the eye has, no doubt, presented a difficulty. In our illustration no hairs are visible. We are able to assure our readers that there is no deception in this instance. We have seen the eye which was photographed; it has the hair upon it, and it is owing to Mr. Watson's method of taking the photograph that no hair is to be seen.

It must not be supposed that an insect sees separate images of objects as shown in our illustration. Although each lens will produce an image in the photograph, the internal arrangement of an insect's eye is such that only one impression of the object is conveyed to the brain of the insect. This is clearly stated in Dr. W. B. Carpenter's work, "The Microscope and its Revelations," * where an account is given of the researches of Professor S. Exner, of Vienna.

Queries and Replies.

[8565] *Candy Feeding.*—I examined my bees ten days ago, and packed them down for winter. All the frames were more or less filled with honey, so I am leaving the whole ten in the hive as I did last year, and the stocks wintered very successfully. I agree with J. H. Meyer in his letter in the February 22nd, 1912, issue of the BEE JOURNAL, on "Too Much Warmth in Winter." I think the more space that bees can have in winter the healthier they are, providing that plenty of warm quilts are used. About the end of November I intend giving a cake of candy to each hive. (1) Shall I place this on top of the quilt over the feeding hole? and (2) Will the bees be able to get at it easily? (3) If I put the candy in a box like a cigar box, will it prevent the bees from getting amongst the quilts? and, at the same time, will they be able to eat it all through the feeding-hole, which is about 4in. square?—R. E. T., Cheshire.

REPLY.—(1 and 2) Yes. (3) Such a box can be used, and the bees will get at the candy quite easily. It would be best, however, to have a glass-topped box, so that you can see when the food has been consumed without disturbing the bees.

[8566] *Air Space in "W.B.C." Hive.*—Why not fill up the space between inner and outer walls of "W.B.C." hives with plumber's felt? Would this not be better than leaving it empty, as advised?—F. H. B., Northants.

REPLY.—The air-space is one of the great advantages of this hive, as it is a bad conductor of either heat or cold. Therefore leave it empty as intended by the designer.

EXTRACTS FROM A BEE-KEEPER'S DIARY.

September 5th.—Returned home from Falmouth by the 10.30 Cornish Riviera train. As we glided over the crazy Cornish bridges, I thought regretfully of the many pleasant rambles I had had in search of apiaries, and how amply I had been rewarded for my trouble by making the acquaintance of such clever bee-keepers as Mr. Stapleton, of Gwinear (whose methods in apiculture are quite original), and Mr. Gednes, who has a charming apiary of seventy hives at Falmouth, and is so generous in giving away swarms to

* Eighth edition, by the Rev. Dr. W. H. Dallinger, page 984.

cottagers. Mr. Gednes had no intention whatever of bee-keeping, but on changing houses, his little girl left her doll's house in the garden of the new domain and next day found that a swarm of bees had taken possession of it! My thoughts reverted to my three flourishing stocks at home, and, like the milkmaid in La Fontaine's fable, I began counting unhatched chickens! I saw my colonies increase, rows of hives stretching round the lawn; new hives would be necessary next season and I was weighing the pros and cons of various makes, when my reverie was broken by the arrival at Paddington.

September 6th.—No need to order new hives at present. Dead bees all over the kitchen garden, and live ones crawling limply on grasses and stalks near the hives. Spent a dreary morning burying a dead fowl and inspecting the hives. A further examination showed the presence of foul brood in one hive, which did not surprise me, as a near neighbour went abroad in June, leaving the hives in such a terrible condition of foul brood, that an expert condemned them to be destroyed. Removed the frames containing foul brood and gave them medicated syrup and apicure. Read in "Guide Book" that requeening is advised in cases of foul brood. Happy thought, send to Mr. Stapleton for new queens and strengthen the colonies with new bees. Sent a wire at once and went on to town to 23, Bedford Street, "Refugium Apicutorum Co.," to consult Mr. Herrod. Unfortunately out. Went on to Lee's, where an expert kindly advised me to use Ayles' cure, as the symptoms pointed to "Isle of Wight" disease. Met a bee friend to whom I explained my troubles. "So you are going to use Apicure and Ayles' cure at the same time," says he. "Well, you won't have a bee left to tell the tale; the two are incompatible." I am beginning to alter my mind about bees. Tricky things to understand. Went on to Gamage's to buy special quilts recommended. The manager hearing about my troubles, offered to send their expert to look at my bees, which he most kindly did that very day. The expert sprayed them with "B-Well" solution.

September 8th.—Sent a box of diseased bees to the laboratory at Cambridge for examination. Crate of bees arrived from Cornwall and were placed upside down on the kitchen table by a porter. On righting the box an ominous click was heard and a tremendous hum began. Do not feel equal to opening the box and uniting the stocks. Mr. Rose, of New Malden (who gained the challenge cup for his Malden honey and an observation hive), came to my assistance. One frame was smashed, but Mr. Rose cleverly patched it up and we requeened the two stocks, uniting the new bees to the smaller colony. The family are beginning to make facetious remarks about my attempts at apiculture! In spite of endless dead bees round the hives, the worker bees are busy this morning bringing in pollen, and as I watch them a new version of the old rhyme, "How doth the little busy bee," occurs to me.

"How do the modern busy bees,
Improve each shining hour?
By courting 'Isle of Wight' disease,
From careless neighbour's bower."

September 15th.—Find robbing going on and countless wasps round the hives. Took all the precautions mentioned in the "Guide Book," except the tent business. Got badly stung by a wasp on my lip, which swelled instantly (bee stings do not affect me) and while battling with wasps was interrupted by the inopportune call of a lady, to whom I had often expatiated on the advantages of bee-keeping! Thought she wouldn't keep bees after all.

September 16th.—A postcard from Cambridge. "No evidence of 'Isle of Wight' disease in bees sent!" Then it must be May pest in September. Almost relieved to read in Mr. Cowan's book that there is no remedy for this disease. Shall I go on trying to cure, or shall I do away with them?

September 17th.—A letter from Mr. Stapleton advising me to try the fresh air cure for them and adding that if I make up my mind to destroy them, to send them to him for experimenting. So I will.

September 18th.—Saw the bees off from New Malden Station, with many injunctions to the guard and return sadly to remove the hives, disinfect the ground, &c. Reflect that I have gained useful experience in bee diseases and I am certainly not alone in misfortune.

October 12th.—A letter from Mr. Stapleton, in which he says, "The few bees that remain are very active carrying pollen, and the queen is laying well; no signs of 'Isle of Wight' disease after three days. I hope to bring them through safe for you." Hurrah! Cornwall may become the county for delicate bees and Mr. Stapleton set up a profitable sanatorium for diseased bees.—W. de A., Surrey.

SWALLOWS AND BEES.

"Possibly some of your readers may not be aware that swallows are very destructive to bees," writes a correspondent from Samer, Pas de Calais, to the *Selborne Magazine*. "This year we have, in the north of France, had an abundance of swallows. They have always taken very kindly to a greenhouse in our garden, which stands near the bee-hives, and hitherto we have encouraged them to

build in it; but this year my wife and the gardener noticed them catching the bees as they returned honey-laden to the hives, and carrying them off to their young ones in the conservatory.

"So they began to destroy the nests, and brought upon themselves enemies from both sides. The swallows fought desperately for their rights, and when the doors were at last closed against them words cannot express the violence of the language which they used, sitting outside upon the eaves.

"On the other hand, when any one came from the nests with the swallow-scent upon them they were persecuted by the bees.

"The swallows feed their young upon the bees and are specially mischievous in hindering the swarms, but do not seem to eat them themselves; for directly the young ones are fledged they no longer frequent the hives.

"I should add that hitherto we have not been very successful in bee-keeping, and now attribute this to the swallows; whether we shall do better this year after the measures we have taken remains to be seen."—*Pall Mall Gazette.*

BEE DISEASE BILL.

Directly Sir D. Brynmor Jones's Standing Committee has finished with the Inebriates Bill a start will be made on the Bee Disease Bill, in respect of which Mr. Vaughan Davies and Mr. C. Bathurst, of Lydney Park, have been added to the Committee. Bills usually pass through Committee with remarkable swiftness under Sir Brynmor Jones's chairmanship, and it is not expected that the Bee Disease Bill will prove an exception to the rule. Mr. Bathurst has several amendments, the most important of which provides that there shall be one authority for the purposes of the Bill, so that different regulations shall not be made for Scotland from those for England and Wales.—*South Wales Daily News.*

WEATHER REPORT.

WESTBOURNE, SUSSEX.

October, 1912.

Rainfall, 3·33 in.
Below average, ·51 in
Heaviest fall, ·71 on 28th.
Rain fell on 15 days.
Sunshine, 132·3 hrs.
Above aver., 11·7 hrs.
Brightest day, 3rd, 8·9 hours
Sunless days, 5.
Maximum temperature, 60 on 9th.
Minimum temperature, 30 on 25th.
Minimum on grass, 27 on 5th, 7th, 18th, and 26th.
Frosty nights, 6.
Mean maximum, 54·8.
Mean minimum, 35·7.
Mean temperature, 45·2.
Below average, 4·0.
Maximum barometer, 30·597 on 4th.
Minimum barometer, 29·311 on 21st.

L. B. Birkett.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

A. M. (Devon).—*Varieties of Heather.*—The sprig you send is *Calluna vulgaris* or common ling, which is an excellent honey plant, the pure heather honey being obtained from it.

Z. Y. X. (Marlborough).—*Swarm-catcher.*—(1) We have ourselves used the "Brice" swarm-catcher with success. (2) It should be put on when the hive shows signs of being overcrowded with bees. On page 23 of the "British Bee-keepers' Guide Book," there is an illustration of a swarm caught in a "Brice" catcher.

Suspected Disease.

C. B. (Malden).—(1) The bees have "Isle of Wight" disease. (2) You can do nothing else except destroy them. (3) You can use the honey for human consumption, but be quite sure that none is left about for other bees to rob. The best plan would be to burn the combs out of the way. (4) Yes, quite fit for use.

BACILLUS (Woking).—You acted wisely, as the bees were affected with "Isle of Wight" disease.

CO-OP (Suffolk).—Destroy the stock at once as it has "Isle of Wight" disease.

J. S. (Pewsey).—We are sorry to say the bees are affected with "Isle of Wight" disease. They have evidently left the hive to die. You have put us to no inconvenience, and there is no fee to pay. We are pleased at all times to be of use to our readers.

Honey Samples.

THEODOSIA (South Wales).—(1) The honey is from rhododendrons, and this is the cause of the trouble you give particulars of. (2) Renew apicure once in three months during winter.

S. W. (Kirkcudbright).—There is practically no difference in the three samples of honey as far as colour is concerned, which is very light. Aroma and flavour are good. No. 1 is of better density than the others. It is excellent honey, and you ought to exhibit it. It should fetch retail 1s. per lb. and 65s. to 70s. per cwt. in bulk.

Editorial, Notices, &c.

MID-KENT B.K.A.

The Mid-Kent Bee-keepers' Association held their annual exhibition in connection with the Kent Commercial Fruit Show on October 29th. and 30th. and the display of honey and bee products attracted considerable attention. Owing to the adverse season the aggregate entries were not so large as last year, but very little fault could be found with the honey. The judge, Mr. W. Herrod, Secretary and expert of the B.B.K.A., stated that he had never seen at any show better quality honey in the medium class. He also spoke in praiseworthy terms of other classes His awards were as follow:—

Six sections, six 1-lb. jars of extracted honey.—1st, A. Humphrey; 2nd,— Boulden, Boughton Monchelsea; 3rd, J. C. Roberts, Maidstone; v.h.c., Sydney Burden, Headcorn; h.c., Walter Beken, Biddenden.

Six 1-lb. sections.—1st, J. C. Roberts; 2nd, A. Humphrey; c.,— Edmonds, Allington.

Three 1-lb. sections.—1st, J C. Roberts; 2nd, W. Beken.

Two standard or shallow frames.—1st, W. Beken; 2nd, Miss Ambler, Malling.

Three 1-lb. jars of light honey.—1st, — Potter, Monkton; 2nd, W. Beken; h.c., H. Brice, Sutton Valence, and P. Cheeseman, Sutton Valence.

Three 1-lb. jars of medium honey.—1st, Miss Town Smith, Yalding; 2nd, W. Beken; v.h.c., A. Humphrey; h.c., J. C Roberts and A Hills, Maidstone.

Three 1-lb. jars of dark honey.—1st, P. Cheeseman; 2nd, W. Beken; v.h.c., S. Burden.

Three 1-lb. jars of honey (open to non-winners at previous shows).—1st,— Potter; 2nd, H. Brice; h.c., A. T. Hills and J. Arkcoll, Maidstone.

1-lb. beeswax.—1st,— Boulden; 2nd, W. Beken; v.h.c.,— Potter.

Candy for bees.—1st, Miss Town Smith; 2nd,— Boulden; h.c., S. Burden.

One jar of granulated honey.—1st, — Potter; 2nd, J. C. Roberts.

Single 1-lb. jar of honey.—1st,— Potter; 2nd, T. G. Richards; h.c., Miss Town Smith.

Single 1-lb. section.—1st, J. C. Roberts; 2nd, S. Burden; v.h.c., Edmonds, H. Watts (Bearsted), and— Boulden.

Honey cake.—1st, Mrs. J. C. Roberts; 2nd, Mrs. Boulden.

On the second day of the show, Mr. Herrod, gave a lantern lecture on "Bees and the Fertilisation of Fruit Blossom." Mr. H. J. Mills, of Smarden, occupied the chair. The lecturer showed the ways in which bees were beneficial to fruit trees. Experiments proved that where the trees had been protected by fine gauze netting, so that bees could not touch them, only a small per cent. of the blossom set, while a good percentage of the blossom set on trees in the same orchard to which the bees had access.—J. C. Roberts, Hon. Sec.

CROYDON B.K.A.

The sixth annual show of the Croydon and District B.K.A. was held at the Horniman Hall, North End, Croydon, on September 5th. Mr. W. Herrod, F.E.S., who was responsible for the judging, was highly satisfied with the efforts of all who participated, and had some difficulty in making the various awards, owing to the general excellence of the exhibits.

Demonstrations on "Bee-keeping" were given from time to time in the bee tent by Mr. Herrod during the afternoon and evening.

The awards were as follow:—

Six 1-lb. sections.—1st and 2nd, J. Silver, Croydon.

Six 1-lb. jars of extracted honey.—1st, G. C. Vincent, Anerley; 2nd, Charles Rose, New Malden.

Six 1-lb. jars of light-coloured honey.—1st, G. C. Vincent; 2nd, C. Rose; 3rd, Rev. C. H. Buxton.

Six 1-lb. jars of medium-coloured honey.—1st, A. E. Barnes, Anerley.

Six 1-lb. jars of dark-coloured honey.—2nd, A. E. Barnes.

Three 1-lb. jars of granulated honey.—1st, G. T. Horn, Croydon; 2nd, A. E. Barnes.

Two shallow frames.—1st, C. Rose; 2nd, A. E. Barnes.

Beeswax.—1st, A. E. Barnes; 2nd, G. C. Vincent.

Single 1-lb. section.—1st and 2nd, J. Silver.

Single 1-lb. jar.—1st, G. C. Vincent; 2nd, C. H. Rose

Observatory hive.—1st, C. Rose.

Best exhibit of articles of food in which honey is used.—1st, Mrs. Horn, Croydon; 2nd, Mrs. Wakerell, Croydon.

Novelties and improvements in connection with bee-keeping.—1st, E. H. Morgan, Sydenham.

Objects of interest in connection with bee-keeping.—1st, G. C. Vincent; c., J. Silver.

OPEN CLASSES.

Six 1-lb. sections.—1st, C. W. Dyer, Newbury.

Six 1-lb. jars of light-coloured honey.—1st, H. G. Ceiley, Muswell Hill; 2nd, A. H. Bowen, Cheltenham; h.c., J. Blackwell, Pitsea.

Two shallow frames.—1st, C. Rose; 2nd, A. E. Barnes.

Six 1-lb. jars of heather honey.—1st, J. Lambolt.

Single 1-lb. section.—1st and 2nd, J. Silver.

Single jar of honey.—1st, H. Ward, Leamington; 2nd, W. J. Halford, Cambridge.

Beeswax.—1st, J. T. Hall, Essex; 2nd, W. S. Halford.

The Vice-President's Silver Challenge Cup was won by Mr. Rose, of New Malden, for greatest number of points.—A. WAKERELL, Hon. Sec.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of October, 1912, was £1,970.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

THE W. BROUGHTON CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged	5	18	6
J. A. Boswell	1	1	0
J. Noble Bower		5	0
Dr. Anderton		5	0
Miss M. Harbord		2	6
D. L.			3
	7	12	3

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

A Queen Changing her Hive.—M. A. Strauven relates in the *Rucher Belge* that in the month of August, which was unfavourable for queen-fertilization, one of his young queens changed her hive. He was rearing queens in nuclei, some furnished with brood of a Carniolan queen, and others with that of an American queen. When one of the Carniolans began to lay, he introduced her into one of his colonies, from which he had removed the queen. About five feet from the nucleus that gave the Carniolan queen, M. Strauven found a nucleus containing a handsome American virgin. Some days afterwards, wishing to satisfy himself whether she had become fertilised, on examining the nucleus, to his great sorrow he found her gone. He concluded that probably on her wedding flight she had become the prey of some bird. A few days later, wishing to see if there were any queen-cells in the Carniolan nucleus, what was his astonishment but to find his young American in it. She had mistaken her home, and although not fecundated, was accepted by the bees in the nucleus, and fifteen days later she had not commenced to lay, for M. Strauven saw her leave her hive on that day and immediately re-enter it owing to the strong wind blowing at the time.

Queen Introduction.—In this connection, M. Strauven describes in the same paper a simple method of queen-introduction recommended to him by a friend, who said that he never cages a queen when she arrives. The colony being queenless, he places the newly-arrived queen on the alighting-board of the hive to which he wishes to introduce her. The bees immediately come out to smell and lick her with their tongues, and she enters the new home with them, having been joyfully accepted. He was assured that this plan had never failed, the only precaution taken was to thoroughly wash the hands before the operation, so as not to communicate any strange odour to the queen. Sometimes a queen will fly off the alighting-board instead of at once entering the hive, but no notice need be taken of this, as she is sure to return and enter the hive for good. M. Strauven has himself tried this plan, which has succeeded very well with him, and he recommends others to try it. We would, however, hesitate in trying it with valuable queens.

The Bee-keepers' Trials and Expectations.—M. Crepieux-Jamin, writing in *l'Apiculture Nouvelle*, says that in reality the bee-keepers' business is not always a pleasant one. If it is a school where man is continually being taught patience, perseverance, and firmness of will, it also puts to a severe test the best tempered characters, by teaching them that all efforts in life are not necessarily crowned with success, and that one must know how to resign oneself occasionally to the inevitable. But let him take courage and look forward to the time to come, as for a certainty future harvests will amply make up for those of 1912, and he will realise that intense and lasting joy which only the intelligent and well-planned work, the result of man's intelligent and persevering struggle against matter, will produce by means of the insects which he has subdued and daily controls with tact, skill and patience.

A German Method of Introducing a Queen.—The following plan is recommended by the editor of *Deutsche Bienenzucht*. Before introducing a strange queen, cage the old one which is to be removed for some hours in her hive, then remove her and put in her place the new queen, in the same cage. The cage must occupy exactly the same position in the hive, and the bees must not be disturbed, but allowed to release the queen themselves. For this purpose the cork stopping the hole in the cage is removed and a thin wax sheet is made to cover it. He says that bees only recognise their mother by her odour, and that this is imparted to the new queen by the cage in which the old queen has been confined.

The Care of Honey.—We read in the *Schleswig-Holsteiner Bienenzeitung* that often serious mistakes are made with

respect to the care of honey. The business of the bee-keeper is to see that this valuable product is properly obtained and handled, as he is the producer. The future care of it, however, must devolve on the consumer. Honey has a very strong inclination to be on good terms with its neighbours, and to acquire some of their properties. If it is kept in a damp place, it will absorb the moisture, and become covered with a dirty, watery film, ferments, and is then spoilt. If honey is kept in the same place as cheese, potatoes, paraffin, or other strong-smelling substances, it will acquire their odour, and at the same time lose its own aroma. The finest honey may be spoilt by improper care. It should always be kept in a dry, cool, and well-ventilated room, free from smells and frost. Good honey carefully preserved, remains unchanged for years.

THE LAWS OF HEREDITY

MENDELISM.

We have pleasure in giving in this and following issues a verbatim report of Mr. F. W. L. Sladen's valuable lecture on "Mendelian Methods Applied to Bee-keeping." The interesting subject of the laws of heredity has attracted much interest generally, and we quote the following from *Feathered Life*, where Mr. Giles Harrison explains in simple words what are the principles of Mendel's Theory.

"As the meaning of the term is not self-defined or self-evident it is a mystery and bewilderment to many beginners, and the study of the subject is a terror to many more. Mendelism is so called after one Gregor Mendel, an Austrian monk, mathematician and scholar, born at Heinzendorf on July 22, 1822. It was in the grounds of the cloister at Brunn that Mendel conducted his famous experiments. The main principle of the doctrine of Mendelism is the conception of unit characters, that is to say, each feature or character is inherited as a single and separate unit, quite independently of the inheritance of other characters each of which is also a unit of itself. The whole organism, then, is an embodiment of unit characters, and these are transmitted singly and separately to the offspring. The processes of variation, selection, and evolution are applicable separately to each unit as such. Inheritanee takes effect in the germ cell as distinct from somatic cells. In animals the germ cells of the male are called sperms, and those of the female ova; collectively they are called gametes.

Before reproduction can take place the ovum must become fertilised by the spermatazoom (or spermatazoa as the case may be). The fertilised ovum is then the organised cell, which is the origin of the progeny from the two parents contributing to its formation, and carries the hereditary elements of parents as respective gametic contributions of the unit characters. This single cell, produced as is seen, by the union of the gametes, is termed the zygote. When the character contributed by the respective gametes is of the same type and nature in both, it is termed homozygous. For example, take rosecomb in fowls. If both parents belong to the rosecombed type and distinctly carry that feature, it is homozygous, and inheritance in such cases mostly follows the popular law of "like begets like." When, however, one gamete bears one type of the character and the other an opposite type, the zygote is then heterozygous, and an example might be cited in a case where one parent was of the rosecomb type and the other a single comb. It is mostly these heterozygous cases which exhibit the characteristic Mendelian phenomena.

Now, when any character is heterozygous there is opposition, or a conflict of tendencies in the zygote, and, as there is no blending or compromise between the conflicting types, one or other of them must dominate. This is termed "Dominant," while the one which is suppressed is "Recessive." Mendel found that the incidence of occurrence of these "D" and "R" characters always represented a ratio of 3D, 1R, and in many more recent experiments by Bateson, Punnett, Davenport, and others, the same results have been observed with an approximate mathematical uniformity.

To illustrate the principle, Mendel takes two distinct varieties of the edible pea (*Pisum sativum*)—one tall, the other dwarf. The flowers of the former were fertilised with the pollen of the latter, and all the seeds again sown the following year. These gave all tall plants, and this is termed the first filial generation, and is expressed by the symbol F1. The self-fertilised seeds from these were duly sown, and produced F2 generation, which consisted of both tall and dwarf plants, the tall or dominant character appearing in the proportion of three to one. The F3 offspring bred from the recessives consisted of all dwarf plants, or, in other words, of a reproduction of the pure recessive character. Subsequent generations of this family bred true to the dwarf type. The portion of the F3 which were descended from the dominants or tall plants exhibit quite a different phenomenon, for some of the F2 tall plants reproduce the tall character, while others produce dwarfs. The former are pure dominants and the latter impure dominants. Pure dominants in subsequent generations continue to breed true to the original dominant character."

MENDELIAN METHODS APPLIED TO APICULTURE.

LECTURE BY F. W. L. SLADEN, F.E.S., GIVEN AT THE LECTURE HALL, ZOOLOGICAL GARDENS, REGENT'S PARK, ON SEPTEMBER 10th, 1912.

The Mendelian method is the method of investigating the laws of variation and heredity in the light of a most important principle of heredity named after its discoverer, Gregor Mendel, monk, and afterwards abbot, of Brünn, in Austria, who announced it in 1865. Although Mendel's conclusions were published in a fairly widely-circulating scientific journal, no notice was taken of them until they were rediscovered and verified by three independent investigators in 1900. Mendelism has thrown a flood of light on the way characters are transmitted, and has formed one of the starting points of the new science of eugenics, or breeding for improvement, which is destined some day to be one of the most important of the applied sciences.

It is necessary to have a clear idea of what Mendelism is.

Mendel made his classic experiments with the common garden pea. In one series of experiments he crossed a tall pea with a dwarf pea, and found that all the resulting hybrids were tall like their tall parent. He named the character that prevailed in this first generation of the hybrids—in this case tallness—the *dominant*, and the character which disappeared, namely, shortness, the *recessive*. He sowed the seed from these hybrids, and found they produced talls and shorts in the proportion of three to one. He was able to prove that the talls in this second generation of the hybrids were of two kinds, those that produced talls only, and those that produced talls and shorts in the proportion of three to one, like the talls in the first generation of the hybrids, and also that the latter kind of talls were twice as numerous as the former kind, and that the shorts produced shorts only. Mendel showed that this remarkable train of inheritance was true for six other pairs of characters in the pea, namely, shape of seed—whether rounded or wrinkled, position of flowers—whether distributed along the stem or terminal, shape of ripe pod—whether inflated or constricted, and colour of seed skin—brown or white, cotyledons—yellow or green, and unripe pod—green or yellow.

The phenomenon of dominance, remarkable as it is, is not the essential part of Mendel's discovery; indeed, it is not present in every case, the first generation of the hybrids being sometimes intermediate in character. We must bear in mind that an individual animal or plant is the product of the union of two marrying cells, or *gametes*, as they are called, the one derived from the male parent, and the other from the female parent. Thus an individual is of double origin.

Now the essential part of Mendel's discovery, recognised by the discoverer himself, is that the gametes are pure in respect of either of the characters in each of the pairs of alternative characters we have been considering, in other words, that a gamete can carry one of the characters of a pair but not both.

In Mendelian language the individual animal or plant is called a *zygote*. If the two gametes that go to make a zygote carry the same character, the zygote is called a *homozygote*. If they carry opposite characters it is called a *heterozygote*.

By applying this theory to the results obtained from crossing the tall and the dwarf peas, we see how perfectly it accounts for them. The individuals of the first generation contain and produce gametes bearing the elements representing tallness and shortness in equal numbers, and the results we get in the second generation are simply due to the segregation of these elements. As Bateson has remarked, the most striking consequence of Mendelian inheritance is the paradox that pure individuals may be bred from impure ones. Once the opposite character has been eliminated the individuals remain pure for any number of generations. Recent investigation suggests that the dominant may owe its dominance to a *factor* which is absent in the recessive; therefore we are not concerned with two opposing factors, but the presence or absence of a single factor. When the heterozygote is intermediate, we have no means of knowing in which of the two pure kinds of individuals the factor resides.

The Mendelian scheme of inheritance has been found to hold good for a great diversity of characters in plants and animals, such as the absence or presence of horns in cattle, the pea comb and the single comb in fowls, the absence or presence of the waltzing habit in mice, and susceptibility or resistance to rust-disease in wheat, to mention only a few.

So far, we have considered the case of only one pair of differentiating characters in an individual, but the same results occur in the case of any number of pairs of characters. In the case of two pairs of differentiating characters we get in the first generation of the hybrids individuals all showing the two dominant characters. In the second generation we get nine individuals showing both dominants, three showing one dominant and one recessive, three showing the other dominant and the other recessive, and one showing both recessives. But it is not so easy to trace the results when there are several interacting factors modifying the same part or structure, or when the factors concerned fail

to correspond with the characters that appear in the zygote, such as factors for inhibiting or developing colour.

Further complications are met with as the result of the repulsion and coupling of certain factors, including sometimes the factors for sex, the inheritance of which in some cases it appears to be possible to express in Mendelian terms. It is often hard to trace the inheritance of utility characters because they frequently are the result of many factors with differences so fine that they can hardly be recognised.

The study of Mendelism in the bee is hampered by several special difficulties. First we cannot control mating in the ordinary way. Then there is the partheno-

extends over the three basal segments, and more or less of the basal part of the fourth segment. The scutellum on the posterior part of the thorax is also yellow. Extreme goldens, with the fourth segment entirely, and the fifth segment more or less, yellow, have also been bred, but it appears that they do not breed true. In Italians the three basal segments are bordered at the edges with black and the scutellum is darker. Italians from the Swiss Alps have the black bands wider than Italians from the Ligurian Alps, while Cyprians have them narrower. Races with the abdomen entirely black occur in Britain, France, Germany, Malta, and other places.

(To be continued.)

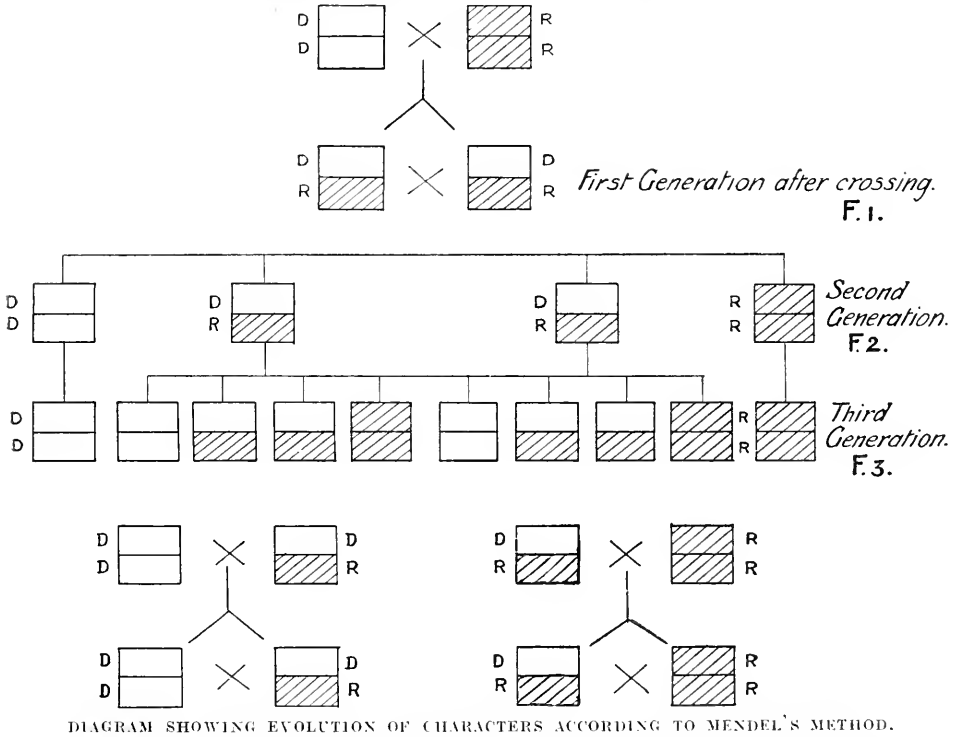


DIAGRAM SHOWING EVOLUTION OF CHARACTERS ACCORDING TO MENDEL'S METHOD.

gentic production of the drone which is likely to have a disturbing effect. Thirdly, the honey-bee is a highly specialised animal, and varies very little. There is some variation in size, the eastern races being smaller than those of the west, but apart from this the colour of the upper or dorsal side of the abdomen is the only visible character that varies strikingly. The variation consists in the extent to which the two colours, yellow and black, displace one another.

Turning our attention, firstly, to the workers, we find that in *Apis indica*, in the Abyssinian bee, and in the artificial varieties known as golden bees, the yellow

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

THE CARE OF APPLIANCES.

(Continued from page 426.)

The roof, having stood for a fortnight or more after the calico has been fastened in position, should receive further attention. To fill the pores in the covering material, priming, mixed with turpentine only, and very thin should be used for the next coat: when this has set, which it will do very quickly on account of the spirit used in the mixing, the ridge piece or, as it is called, "the cap," should be nailed on. While the roof is drying, this cap should receive three

coats of paint on the underside, so that it will be well preserved.

The whole hive being now ready for the two final coats, these should be applied in the same manner as was the priming, *i.e.*, put on as thinly as possible.

The best colour for hives is white, as it does not attract the heat in the summer time, the drawback being that it soon looks dirty. I make a compromise and paint the body of the hive a light stone colour, and the roof white: the hives then never look dirty and the white roof assists in keeping the hive cool and can easily be repainted each spring to freshen it up.

Do not paint the hives all the colours of the rainbow, which makes them look sadly out of place in a well-kept garden. Neither should dark colours be used, for they make the hive very hot. Gardeners, as a rule, are very fond of green paint; it is a mistake to use this for the reason given above, also because it has little body in it and therefore does not withstand the weather.

Hives should be painted every three years, at least two coats of paint being put on.

After a series of paintings, it will be found that the paint begins to blister. When this is noticed and it has not taken place to any great extent, the surface should be made smooth and solid before painting again by rubbing with pumice stone and water. If it is a bad case, then the only remedy is to burn the paint off right to the wood, by means of a blow lamp, then treat the hive as if it were a new one. After burning off the paint, a smooth surface is obtained by using pumice stone and water.

The novice often finds difficulty in getting the brush to work properly. This is on account of its newness. A brush half worn out is much the best tool to use, but cannot always be obtained. If a new brush is purchased, its life can be prolonged by proper treatment. First part the bristles so that the centre of their root can be seen, then pour in some knotting or varnish. This will fasten the bristles securely and prevent their coming out. To make the brush work more comfortably, continue the string wrapping which is round the bristles, so that only about 1½ inches of the latter project. Soak the brush well in water before use.

Always, after use, scrape out as much paint as possible from the brush, and stand it in a vessel with water, so that the bristles are completely immersed, or it will become hard. When changing the brush from one colour to another, wash it out well with either turpentine or paraffin.

Two brushes are required when painting, a fairly large one for the plain portions and a smaller one for the rebates and edges.

Putty can be bought cheaply, but if desired it can be made. The process is very simple. Whiting is mixed to a paste with linseed oil, the mass is then beaten with a hammer until it gets quite tough, small quantities of whiting being added during the operation until it assumes a dough-like consistency.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

DUTCH BEES.

[8592] I was interested in the letter on the above subject (8588, page 445) in last week's BRITISH BEE JOURNAL, as during September last I paid a visit to Holland to secure some cinematograph pictures of Dutch bee-keeping, and during my stay there visited Mr. Hans Matthes, at Breukelen, who is the owner of 400 colonies of the healthiest bees I have seen. He assured me that "Isle of Wight" disease, or foul brood were unknown there. Mr. Matthes is a bee-keeper after my own heart, his hives are very simple; they have neither legs, alighting-board, nor porch, and instead of quilts he places a very thin board over the frames to keep the bees down, but what appealed to me most was the fact that he makes his bees build combs before storing surplus.

The Dutch method of honey-production is as follows. Just before the honey-flow, shallow frames with *starters* of foundation are placed in hives; when these are full the honey is extracted and the frames returned to the hives, which are then taken to the moors for the buckwheat and heather. At the close of the heather harvest the combs are cut into chunks, wrapped in butter paper, and placed in small tins of a convenient size for sending through the post. The empty frames are then cleaned and put away for use the following year, to be again fitted with starters of foundation. This seems to be the system generally followed by bee-keepers with frame hives; but the skeppists predominate. I visited one skeppist who owned 300 stocks, of which about 50 per cent. would be assigned to the sulphur pit, so that whether the bees are kept in frame-hives or skeps they have a good share of comb-building, and I think here lies the secret of their clean bill of health.

I quite agree with "P. S." that Dutch

bees are the best to start with. Before I left Holland I ordered from Mr. Matthes 100 swarms to be delivered in London next May.—J. C. Bee Mason, Upper Clapton, N.E.

BLURTS FROM A SCRATCHY PEN.

[8593] "A tale of old." Yes! At length in this year of grace, 1912, bee-keepers and those interested therein can look round and note with some satisfaction apiculture better appreciated, though not as yet at its full value. We must wait even a little longer for that. But we do see, that economists are being brought to understand that one of Nature's choicest delicacies, best and healthiest of foods, has for centuries been allowed to evaporate in the fields that produced it, deemed hardly worth the pain of the stings and the messiness of its extracting. The scientist finds, too, in the study of the bee itself and bee life, a subject of absorbing interest, and for the industrious, there is labour which judiciously employed, brings seldom equalled profits.

And to what may we ascribe this happier state of our affairs? In Great Britain (and Great Britain is well in the advance) no one can dispute that it is owing (I might with truth say, entirely) to the strenuous work of the British Bee-keepers' Association, with its ramifications into the provinces, the County Bee-keepers' Association, and to our periodical, The Bee Journal.

A very great amount of spade-work has been done by the County Associations. Theirs, has been the task of getting down to the masses, seeking out the villager, whose hives help him to pay his rent, the comfortable-to-do class, who are not compelled to keep bees as "pot-boilers," and the philanthropic vicar, wishing to set an example to his flock. It has been their privilege to get at these and disseminate the knowledge of "how to keep bees on humane principles."

It must interest all to follow the growth of these organizations and note how they commenced. The first I find mention of is the "British Apiarian Society," founded in 1811, at Dover, and in 1867 there was established at Buxton, in Norfolk, by the Rev. W. J. Stracey, a "Bee Club," on the principles of a clothing club. Only one member was allowed in each family, and he or she contributed "not less than threepence per week," which, of course, accumulated for the purchase of bees, hives, and appliances. The B.B.K.A., the Senate of the affiliated counties was, as we all know, founded in May, 1874, and its rules, as first ordained, speak volumes for the wisdom and foresight of our predecessors. Recognizing that the main reason of their existence was to cement, and to bind together the whole of the craft for common action to mutual advantage, they determined (Rule viii.) that "as far as the funds of the Association permit, the Council will endeavour to carry out the objects of the Association, by means of certifying and sending out experts as qualified teachers and examiners of apiaries, and assist in the formation of provincial clubs affiliated to the Association."

This latter resolution seems to have "caught on" almost at once. In the B.B.J. of November, 1875, is recorded the formation of an Association for Lincolnshire, and in the same number Devon is spoken of as "hard in the wake." Mr. Wm. Watkins, of Roby, Liverpool, offers his services as secretary, *pro tem*, and writes "if we can get two only, or even one member, in each county, to take the matter up in earnest, the British Bee-keepers' Association has a brilliant time before it."

Had this gentleman the gift of prophecy? In August, 1876, Staffordshire formed its Association at Wolverhampton, and in 1877 an attempt was made to form an Association in Shropshire, but of its success or failure there is no record.

The B.B.K.A. was not long in discovering that to make things go, something else besides an energetic Secretary was required. We all know that as the secretary is, so will be the society, but a capable lieutenant in the guise of a touring expert was a necessity to get to the people, to interest them by exhibitions of manipulating and lectures. At the committee meeting of May 13th, 1878, it was decided that the Secretary "should insert an advertisement in the Bee Journal, for a man to work for the Association, for the purpose of giving practical illustrations of bee management," and at the committee meeting of July 8th, Mr. S. J. Baldwin was appointed the first *official* expert. *Official*, I say advisedly, because in the January number of 1874 is inserted an interesting letter from Colonel Fielding, of Sturford Mead, Warminster (dated October 3rd, 1874), testifying to the abilities of a young expert, who further correspondence shows to be J. A. Abbott, junr., and I notice in the Bee Journal of those days that the firm of Abbot offer their services for expert advice. In the November number of 1878 appears the first expert's report and tells how the bee tent, a crimson flag flying from the pole, marched, first appearing at South Kensington, then going to Harpenden, Rickmansworth, Sevenoaks, Sandy, Petworth and Berkhampstead.

Tempora mutantur. Times change and men with them. The "man to work for the Association," as in the first instance, now requires a specialist of the very first rank, as witness the present expert to the Association, Mr. W. Herrod. We have the Board of Agriculture granting aid, and a bill to regulate Bee Diseases almost

through Parliament. Does it not mean that "the man" in future, working even for the County Associations, must be a man of higher training, a *persona grata* to the members, able to interest them by his conversation in the advantages of bee-keeping.—J. SMALLWOOD, Hendon.

ARTIFICIAL INCREASE.

[8594] An account of an experiment I made in August last may interest some of your readers. Four of the hives in my home apairy were so crowded with bees, that I thought they would do better if I made up a stock from them on two racks of shallow frames wet from the extractor that I had on the moors. I made two swarm boxes, and in the morning of Aug. 21st. set to work to get the bees into them, but bees are not put into boxes in the morning as easily as one would think, until one knows how to do it. At night they can be shaken down in front of any substitute for a hive, and they will run into it, but not so in the morning, they will run anywhere but into the box, even if it is put where their hive previously stood. For three hours I went through a stinging ordeal, trying to get those bees into the swarm boxes (when I found out the right way to go about it, it was not ten minutes' work). Novices and moorgoers should note this. I discovered that the best plan was to find the queen first, and after securing her take the outside frames (leave all bees on about three of the combs in the centre, together with any combs of brood, as young bees will be on these, and it is only old bees we want; these are mostly on outside), shake the bees off into a tin pail, they cannot run up the side of this; get about 2lbs. out of each of four or five hives. When you have gone through the process with one hive, pour the bees into the box and slide the lid on. Then take the quantity of bees you desire from the next hive, uncover the box and before the bees already there can fly, pour the others in. Stand the box on a newspaper, then those bees will fly up and go home which do not enter the box. I did not put any queen with the bees. I took a virgin queen with me and as they ran in I ran her in among them, after throwing one box full down on top of the other. Unfortunately this virgin never got mated, as well as two others that went to the moors. I took 9lbs. of bees out of four hives, and in two boxes tied to a stick across the handle bars of my bicycle I conveyed them between six and seven miles to the moors, but they stored the little honey they got in the top lot of shallow frames; it was about 10lbs. What they would have gathered in a good season I can't say, but the experiment is well worth trying again. Some might ask, "Did the bees fight?" That was what I was most afraid of. But I did not find more than one hundred dead on the newspaper after they had all run in, and although it was mid-day they hived themselves in double quick time; probably the wet combs attracted them. It was surprising that they were not starved out, as the weather was so unfavourable. I saw them three days after hiving them, and they were all right then, but it was another month before I was able to look at them again. With fear and trembling I turned down the quilts, but judge of my surprise when I found all the tops of the middle combs beautifully sealed over with the white capping only seen with heather honey. I have not had one comb or one section completely filled and sealed this year, and most of the honey was very thin. I put all the heather combs through the extractor to get the thin honey out, it is not very thick now and is of dark colour. The prospect for 1912 never was a very bright one, as nearly all the young clover was burnt up in 1911, and in consequence many fields were ploughed up again, but the outlook for 1913 is very rosy in comparison. Even now round here the young clover is looking remarkably well, so there is hope for a bumper crop next year. Can any old bee-keeper remember what kind of a honey year 1889 was? Although bees did not interest me then, I well remember the year 1888 as very similar to 1912, a very wet summer with two months of dry weather from September 21st to November 23rd. I expect the year 1888 would be a very bad one for bees, and I should very much like to know what the following year was like. What delightful bee days we have had during this last six weeks.—TOM SLEIGHT, Danesmoor.

RANDOM JOTTINGS.

By Charles H. Heap, Reading.

Mr. S. Simmins, in his recent articles entitled, "More Self-Help Required," appears to have set himself the impossible task of trying to persuade bee-keepers that the disease which has carried off thousands of stocks during the past five or six years is "quite a simple matter." Though Mr. Simmins avoids the name, *microsporidiosis*, or even the popular appellation, "Isle of Wight" disease, he does not get rid of the serious nature of the malady by calling it "infectious paralysis"; and it is useless to pretend that the spread of the trouble is solely due to carelessness and neglect. I have seen much of the disease in two widely

separated counties, and have failed to notice that it leaves untouched the apiary of the competent bee-keeper any more than that of the incompetent and careless. To pass to another point I am willing to concede that a colony only slightly affected with *microsporidiosis*, may, under favourable weather conditions, partially overcome the attack, provided the queen is very prolific; but the disease is sure to show itself again when the conditions for its development again become suitable. Partial recoveries are not infrequent, but I do not call a partial recovery a cure. It is when these partial recoveries occur that people are apt to rush into print and proclaim that a cure has at last been found, and that the immune bee has arrived. Mr. Simmins's method is to spray the bees with "a suitable germicide," and, he adds: "Not only a young queen, but in the case of weak stocks, I advise the addition of healthy brood and bees." Stocks suffering from "Isle of Wight" disease become weak, so that this method of curing consists, to all intents and purposes, in the provision of a new stock. How delightfully simple—and cheap! I wish Mr. Simmins would descend from high-sounding generalities and explain to us all precisely how a germicide outside the impermeable chitinous covering of a bee reaches the spores of nosema that lie not only in the lumen of the intestines and stomach, but work their way into the walls of these important organs and disintegrate them.

In the report of the Board of Agriculture, issued six or seven months ago, we were told that drugs had been tried and had failed, and from my own observations of two chemical remedies I am inclined to agree with this finding. For the present, I put my faith in the trained scientists who have been investigating this exceedingly serious and difficult disease. Had Mr. Simmins been referring to foul brood, I should be in general agreement with him.

A Boon to the Craft.—There is no doubt that faced with an outbreak of foul brood, a great many bee-keepers are helpless. Such helplessness arises from a variety of causes, the chief of which are ignorance, and dread of stings. Thousands of people who are keeping bees know scarcely anything of the habits and life history of the denizens of the hives; and, as a consequence, they fail to discover the existence of brood disease. Even when its existence is pointed out to them they are incapable of setting to work to effect a cure. Formerly, unless expert assistance were at hand, the position of stocks owned by these people were hopeless; but, happily, the experiments of Mr. Herrod, which resulted in the production of Apicure, have replaced hopelessness by hope, and have rendered the cure of stocks suffering from foul brood not only possible but easy. I have had little trouble with foul brood in my own apiary, but while touring a Midland county in the spring I had an opportunity of witnessing the remarkable effects of Apicure in an apiary comprising six stocks, all of which I was told by their owner—a bee-keeper of skill and experience—were badly affected with foul brood in the previous autumn. I made a minute examination of every comb containing brood, and, although the disease was rampant in the neighbourhood, I only succeeded in finding three cells whose contents were doubtful. So greatly was I impressed with this evidence of the efficacy of Apicure that I recommended it to a number of bee-keepers as a simple means of getting rid of the disease. Most of them accepted the advice, with (I found this autumn) excellent results. Even where the remedy had been sparingly applied, a distinct improvement was, in every instance, observable. In the apiary to which I alluded the treatment was continued, and at a later visit every colony was absolutely free from brood disease. To the capable, busy bee-keeper, Apicure will prove as great a boon as to the poor bee-keeper. It not infrequently happens that pressure of work prevents a man taking a case of foul brood in hand immediately. The results of delay are more or less disastrous; but Apicure may be used to prevent the advance of the disease until time can be found to do what is required; or, if preferred, it may be used to effect a cure. When supers are on it is a troublesome job to lift up rack and queen-excluder in order to drop the little tablets between the frames at the back of the brood-chamber; but there is an easier, better and quicker way of applying the remedy. Unless the hives stand far apart, it is possible to dose twenty stocks, carrying any number of supers, within an hour, provided each ordinary hive has a loose floor-board. Remove the tablets of Apicure from the bottle into a small shallow box for convenience in handling. Then, with this and any necessary tools, go to each hive, lift with one hand the hive body from the floorboard two or three inches at the back or side, as may be convenient, and with the free hand cast the pieces of Apicure under the frames and let the hive body return gently to its place. If the operator uses care and judgment not a bee will fly out, for the work will be done before the inhabitants have time to rub their eyes after his sudden influx of light. If two persons work together the task is easier; but very little practice is required to enable anyone single-handed to perform the operation quickly and neatly.

Queries and Replies.

[8567] *Feeding with Candy—Vicious Stock.*—I should be much obliged if you would answer me the following questions through the "B.B.J.":—

(1) When bees take down candy rapidly do they store it in the combs, or are they eating it at once? My stocks are taking down candy at the rate of about 1lb. per hive per week, and if this goes on the expense will be considerable. I may say my stocks are very low in stores.

(2) One day last summer I got stung in the back of the neck. In about an hour one of my eyes became practically bunged up, and no bee had touched my face. On several other occasions bees managed to crawl up my legs and to sting me. The swelling always came out on my ankle—apparently no matter where the sting was—and incapacitated me once for two or three days, when I had to lie up. Is there something wrong with my anatomy, or is there something wrong with the bees, or does everybody suffer in like manner? I cannot imagine how people manage who wear neither veil nor gloves.

(3) I have one hive in which the bees are very bad tempered. Carbolic cloths and dense volumes of smoke appear to be useless to calm them. The queen is a valuable one, and I do not want to lose her. I am keenly interested in bee-keeping, and derive great help from the "B.B.J."—E. N. P., Manchester.

REPLY.—(1) The bees are storing the candy. Do not give them more until the cold weather sets in. (2) No two persons suffer alike from stings, owing to constitutional differences. In time probably the effects will be less severe. (3) No matter how good the bees are as workers, they are unpleasant to deal with if vicious. The only remedy is to requeen next spring, purchasing a queen for the purpose.

Notices to Correspondents.

A. P. W. (Sussex).—*Wax Press used as Uncapping Tray.*—There is no reason why a wax-press such as you describe should not be used. We have never tried it ourselves.

W. J. B. (Hants).—*Queenless Colony in November.*—The earliest time when you can introduce a queen will be the latter end of March, and then only if weather is fine. There should be no difficulty in obtaining a queen through our advertisement columns.

G. D. C. (Horsham).—*Bee Diseases Bill.*—Though you have not complied with our rules, by not sending full name and address, we will stretch a point and reply to your questions. If you will carefully read the proposed Bill, you will see that provision is made for all the contingencies you mention.

A. B. C. (Bletchley).—*Sugar for Bees.*—The sample is cane sugar and suitable for bee food.

H. H. S. (Middlesex).—*Planting for Bees.*—Messrs. Sutton & Son, of Reading, will send you a list of bee plants which they can supply. The best bee flowers are white clover, sainfoin, heather, melilotus, Lymnanthes Douglassii, borage. Apart from fruit trees, the best tree honeys are from lime, sycamore, hawthorn, blackberry, etc.

Honey Samples.

J. M. (Aberdeenshire).—A very mild heather blend, worth 1s. per lb.

E. B.—You have not conformed to the rules regarding sending name and address.

CAMBRIDGESHIRE.—The honey may be "pure" but it is not English. We should say it is Jamaican honey.

A. W. B. (Herefords).—In our opinion the sample is better class Jamaican honey.

Suspected Disease.

J. N. G. (Newmarket).—The bees are affected with "Isle of Wight" disease. The best course to adopt at this time of year is to destroy the bees, burning combs, quilts, dead bees, &c., and disinfect the ground on which the hive has stood.

J. L. (Merton).—It is "Isle of Wight" disease. See reply to "J. N. G."

J. S. (Wilts).—"Isle of Wight" disease unfortunately makes its appearance in the most unlikely places. Your best plan will be to destroy the affected stocks, afterwards burning everything but the hives, these should be thoroughly disinfected.

A. W. (Notts).—The symptoms indicate "Isle of Wight" disease, from which we are of opinion your bees are suffering.

R. L. (Thurning).—We fear it is a case of "Isle of Wight" disease. Watch on fine days for crawling bees, and if such are noticed, write us again.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

WANTED, Cowan 4-frame Extractor, complete, in good condition, in exchange for Gloucester hot-air 100-egg Incubator, in perfect working order, new last season, used twice only.—H., Harrow-place, Leavenheath, Colchester. v 79

OWING to Death.—Few Stocks healthy Bees left, in good frame hives, only 20s. each.—LEECH, Newland Park Hull. v 76

Editorial, Notices, &c.

SUSSEX B.K.A.

ANNUAL SHOW.

The second annual show of the above association was held at The Dome, Brighton, in connection with the Brighton, Hove, and Sussex Horticultural Society's Chrysanthemum Show on November 5th and 6th. The exhibits staged were of good quality, especially in the open classes for extracted honey, where the competition was very keen. Entries for sections were rather few in number, owing to the bad season, but the show, on the whole, was a very creditable one, and the many visitors greatly admired the honey exhibited.

Lectures were given each day by Mr. C. T. Overton, lecturer and expert to the Association. The judge, A. J. Carter, Esq., made the following awards:—

MEMBERS' CLASSES.

Six 1-lb. Sections, gathered during 1912.—1st, C. H. Crone, The Apiaries, Plumpton; 2nd, Miss Blencowe, Binehams, Chailey; 3rd, A. G. Davey, Hillcrest, Burgess Hill; h.c., Mrs. Charrington, Offham House, Lewes.

One Shallow Frame of Honey, gathered during 1912.—1st, A. Capelin, Hodshrove, Falmer; 2nd, Sisters of Bethany, Laurel Cottage, Crowborough; 3rd, Parker and Hind, The School, Rottingdean.

Three Shallow Frames of Honey.—1st, A. Capelin; 2nd, Parker and Hind; 3rd, E. N. Marten, Park Corner, East Hoathly.

Six 1-lb. Jars of Light Extracted Honey.—1st Miss Burder, The Beeches, Barcombe; 2nd, R. H. Buzzard, Hillcote, Buxted; 3rd, W. H. Caldwell, School House, Etchingham; h.c., A. Capelin and E. N. Marten; c., A. Burtenshaw, Hassocks.

Six 1-lb. Jars of Medium Extracted Honey.—1st, A. G. Davey; 2nd, J. Fairall, junr., Leabridge, Hellingly; 3rd, G. Butler, County Oak, Crawley; h.c., Rev. A. A. Evans, Eastdean Vicarage, Eastbourne.

Six 1-lb Jars of Granulated Honey.—1st, W. H. Caldwell; 2nd, A. Capelin; 3rd, Miss Burder.

Beeswax.—1st, J. Fairall; 2nd, R. H. Buzzard; 3rd, F. Harris, Avisford, Walberton.

OPEN CLASSES.

Six 1-lb. Jars of Extracted Honey.—1st, R. Allen, Tusmore, Bicester; 2nd, W. S. Halford, West Wratting, Cambs.; 3rd, W. Bourne, High Street, Esher; h.c., A. L. C. Fell, Long Wall, Walton-on-Thames.

Six 1-lb. Sections.—1st, R. Allen.

Single 1-lb. Section.—1st, T. J. Hillier, Hurstbourne Parrand; 2nd, J. Silver, Addiscombe; 3rd, J. Fairall.

Single 1-lb. Jar of Extracted Honey.—1st, H. Ward, Leamington Spa; 2nd, R. Allen; 3rd, W. S. Halford.

Messrs. C. T. Overton and Sons staged a fine display of honey, and also a large collection of hives and bee appliances not for competition.

The medal presented by the Editor of the *Smallholder* was awarded to Mr. A. Capelin, and the *Smallholder* clock to Mr. J. Fairall.—C. A. OVERTON, Hon. Sec.

NORFOLK B.K.A.

The annual show of the Norfolk B.K.A. was held in Melton Constable Park (by kind permission of Lord Hastings) on Bank Holiday, August 5th, 1912. The amalgamation with the local Horticultural Society resulted in an attractive exhibition. Although the honey staged was of the usually excellent Norfolk type, there was a sad numerical deficiency, both in entries and in pounds.

Dr. Elliott, of Southwell, judged the honey and wax, and later examined several candidates for third-class B.B.K.A. Certificates. The following awards were made:

MEMBERS' CLASSES.

Twelve 1-lb. Sections.—1st, W. T. Norman; 2nd, H. W. Saunders, Thetford; 3rd, H. Digby, Weybourne; r., Miss Leaver, Letheringsett; v.h.c., the Rev. W. O. Leadbitter.

Twelve 1-lb. Jars Extracted Honey.—1st, H. W. Saunders; 2nd, Miss Leaver; 3rd, H. W. Woolsey, Edgefield; r., the Rev. W. E. Mattinson, Horsey.

Six 1-lb. Jars Extracted Honey.—2nd, Miss Verrall; 3rd, Mrs. Wardleworth.

Three 1-lb. Sections and Three 1-lb. Jars Extracted Honey.—2nd, Miss Verrall.

Beeswax.—1st, J. Platten, Briston; 2nd, H. W. Woolsey; 3rd, Rev. W. E. Mattinson.

OPEN CLASSES.

Twelve 1-lb. Sections.—2nd, W. T. Norman.

Twelve 1-lb. Jars Extracted Honey.—1st, H. W. Saunders; 2nd, H. W. Woolsey; 3rd, Rev. W. E. Mattinson.

Single 1-lb. Jar Extracted Honey.—1st, H. W. Saunders; 2nd, H. W. Woolsey; 3rd, Rev. W. Mattinson; r., Miss Verrall; v.h.c., Miss Leaver.

Single 1-lb. Section.—1st, H. W. Saunders; 2nd, W. T. Norman, 3rd, H. Digby.

The challenge cup was won for the third time by Mr. H. W. Saunders, and became his property, the silver medal (B.B.K.A.) by Mr. W. T. Norman and the bronze medal by Miss Leaver. The certificate was not awarded through lack of entries.

The successful candidates for the third-class certificates were Miss McHardy, Letheringsett; the Rev. W. E. Mattinson, Horsey; Mr. H. W. Woolsey, Edgefield; and Dr. Wardleworth, Sheringham.

FURTHER NOTES ON THE PROCESS OF POLLEN COLLECTING IN *BOMBUS* AND *APIS*.

By F. W. L. Sladen,
(Assistant Entomologist for Apiculture, Division of Entomology, Ottawa, Canada.)

The following are a few additional observations on the above subject that I should like to place on record :—

In pollen-collecting *Bombi*, I have often found lumps of moistened pollen clinging to the hairs clothing the middle of the first ventral segment, which is raised considerably. It would seem that the pollen on its way to the hind metatarsi passes over this spot.

I pointed out in a May issue of the "B.B.J." that in *Bombus* the moistened pollen is normally found only on a small triangular portion of the metatarsal brush, situated in the corner of the metatarsus containing the auricle, and this is the only part of the brush that is scraped by the tibial comb. In *Apis*, on the other hand, the pollen is spread over the whole of the metatarsal brush, and the tibial comb appears to scrape the whole width of the brush. By reference to the accompanying Fig. 1, it will be seen that in *Bombus*, not only do the structure and shape of the comb render this instrument unsuitable for scraping the whole width of the brush —the teeth being weak, long and hair-like towards the articulating corner of the tibia, and the tips of the teeth forming a nearly straight line—but the inner spur *s* of the tibia would stand in the way of its doing so, except when the leg is stretched perfectly straight. But *Apis* appears to be able to comb pollen out of the whole width of its metatarsal brush, because (see Fig. 2) first, the comb has no hair-like teeth towards the articulating corner; indeed, it does not extend so far; secondly, the tips of the teeth form a convex curve, and, thirdly, the obstructing spur is absent. Indeed, both of the spurs at the end of the tibia are absent, and *Apis* is the only genus of bees in which they are not found.

In both *Bombus* and *Apis* the inner side of the tibia is thickly covered with short, stiff bristles, excepting the region bounding the comb. This region I here designate the *pars glabrum* (Figs. 1 and 2, *g*). It is evident that this region is rubbed when the comb is used, and that this rubbing is its *raison d'être*, and it may therefore be supposed that its width opposite any given teeth in the comb furnishes a rough indication of the depth to which such teeth enter the metatarsal brush, and the extent to which they are used.* This view makes a comparison between the *pars glabrum* of the *Bombus terrestris* worker (*g*, Fig. 1) and that of *Apis mellifica* (*g*, Fig. 2) very interesting.

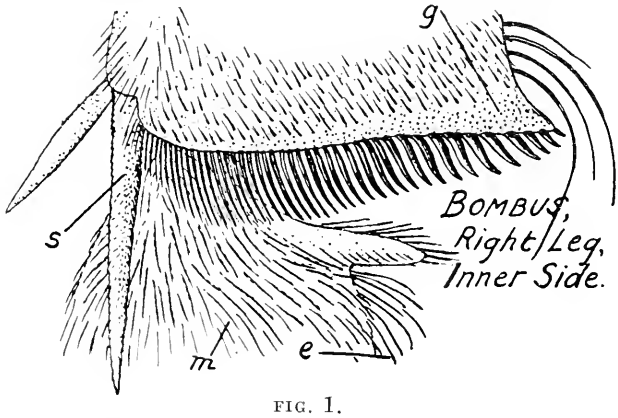


FIG. 1.

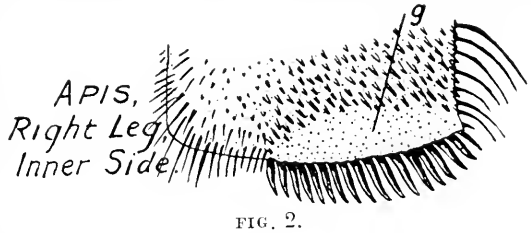


FIG. 2.

In *Bombus* the moistened pollen is often found in lumps on the hairs shown at *e*, Fig. 1, fringing the metatarsal brush.

Explanation of the Drawings.

Fig. 1.—Juncture of tibia and metatarsus of right hind leg of *Bombus terrestris*, worker, inner side.
s, inner spur; *g*, *pars glabrum*; *m*, metatarsal brush; *e*, fringe of metatarsal brush.

Fig. 2.—End of tibia of right hind leg of *Apis mellifica*, worker, inner side.
g, *pars glabrum*

Fig. 3.—End of left tibia of *Bombus*

* Of course, the extent of the rubbing area depends primarily on the convexity of the surface of the tibia, the angle to it at which the comb is set, and the angle at which it strikes the metatarsal brush.

terrestris, worker, end view, showing excipula and limen; *c*, comb.

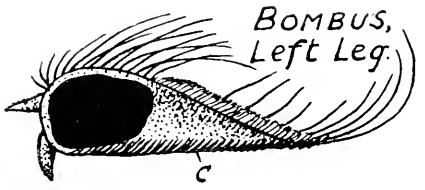


FIG. 3.

Fig. 4.—End of left tibia of *Apis mellifera*, worker, end view showing excipula and limen; *c*, comb.

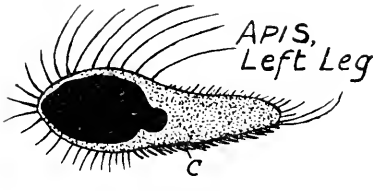


FIG. 4.

AMONG THE BEES.

FORETHOUGHT.

By D. M. Macdonald, Banff.

Last year was a very bountiful one. This year, on the contrary, was very poor, as far as surplus honey was concerned. Honey being plentiful in 1911, the crop sold out slowly at a poor figure, while this year it was disposed of before being taken off the hive. Here is a subject deserving careful thought from all prescient bee-keepers. Extracted honey can be easily preserved for a year or two, but it is generally understood that comb honey deteriorates before early spring arrives. Not necessarily! Several bee-keepers last year unable to procure customers for all their sections preserved them carefully through the past winter and sold them at a good figure during June of this year; indeed, if they had known the crop was to prove so much of a semi-failure as it did, they could easily have disposed of them at an enhanced price. Candied sections are unsaleable, but these were carefully stored away in a cupboard in a "garret," close to the roof ceiling, and came out in early summer as fresh as when they were packed away. In testing them I was unable to detect any granules, and the flavour was particularly good, almost as pleasant as when taken off the hive. I reasoned it out that by a little forethought many bee-keepers in a year of a glut could thus preserve even section honey to profit by the enhanced price. The only danger I can see is that the following season might be a bountiful one, too, and that, therefore, the "preserved" honey might prove a drug on the market.

Nomenclature.—I find there is often a very large amount of careless and inappropriate application of technical terms from even educated men in speaking about bees and bee-keeping. Thus a *swarm* is frequently called a *hive*, while there is often a considerable degree of haziness as to the use of *stock* and *colony*. All the four words ought really to be applied under different circumstances; indeed, to dissimilar things, because the terms are by no means synonyms. A "hive" is simply the receptacle in which bees are hived, *i.e.*, their home. A "stock" includes not only the house in which the bees dwell, but also its fittings and the bees themselves. A "colony" of bees might be defined as the queen, workers, drones, brood, eggs, honey in the hive, and, as these are an utter impossibility in themselves, we must also include the cells, combs, and also the frames on which the fabric is constructed. A "swarm" includes only the worker bees, with their queen, and perhaps a few drones. The bees constitute a swarm as soon as they have left the parent hive to colonise, while they are winging their joyful way through ether, when they have formed a cluster, and when they are consigned to the skep preparatory to being run into their new domicile. Some might claim that the name should still be retained while they are comb-building, and perhaps even during the first season of their existence as a new colony. It may be difficult to say just when they cease to be a swarm and become a colony, but perhaps it may be agreed that whenever the home nest is established they may be deemed worthy of the more dignified designation.

The term "hybrid," as generally used by bee-keepers, is sufficiently clear and definite. Dictionary definitions may at times have to give way to common usage. I should like to see a more manageable and more definite name than either "Isle of Wight" or *Microsporodiosis* for the pest these terms represent, but none of those suggested as yet "fill the bill." The simple word "cure" is a much abused one in bee literature! I feel personally guilty, because I have written about sting cures when I really meant palliatives, and if many other *cures* were deeply probed, they, too, would be in much the same category. Bees gather honey from the flowers we are often told. Do they? Then I must have been going all my bee days with a defective vision and a depraved, or at least a vitiated, taste, because what I have seen and *tested* was far from being the genuine article which so pleases the palate of every admirer of true honey.

Excluder Zinc.—I have in the past been fallen foul of by some writers for advocating the non-use of this modern

appliance, because I have found it a *honey*-excluder as well as a queen-excluder. At times, however, I agree it is indispensable in the hive. One of these occasions is when carrying out the system of doubling I lately advocated. The "Capper" uncapped that cell and pointed out rightly that I should have mentioned it. Two others wrote querying whether it should be used, and, as they did not ask me to "lick stamps," I sent replies direct. As, however, it was almost a *necessity* in carrying out the plan, I took it for granted, a thing perhaps I should not have done, seeing beginners may be led astray by the omission. Excluder zinc also comes in handy in catching a queen hard to find. When bees run up through a sieve of this material, the queen is left behind, and is then easily found by even a dim-sighted individual. It also forms a part of the drone sieve I lately described. In such a system of queen rearing as Mr. Sladen's, where the frame of cells, with one of brood and one of food, forms a semi-detached compartment behind or at one side of the brood nest, excluder zinc is a necessity, and also when queens are being reared and mated in an upper storey, with a laying queen in the brood body proper. So queen excluder zinc has its uses in the apiary, I grant.

W. BROUGHTON CARR MEMORIAL FUND.

	£	s.	d.
Amount previously acknowledged	7	12	3
Miss K. White	0	5	0
T. Card	0	2	6
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Captain Sitwell	0	2	6
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F. R. Howard	0	2	0
W. Garwell	0	2	0
	£8	11	3

PHOTOGRAPH THROUGH COMPOUND EYE OF A BEE.

We thank the many readers who have sent letters of appreciation of this illustrated article (which appeared in the "B.B.J." for November 7th). We should also, at the same time, like to express our indebtedness to Mr. W. Springett, of Harlington, Middlesex, who very kindly called our attention to this photograph, and took a great deal of trouble in helping us to secure the reproduction of the same. Mr. Springett is a bee-keeper of many years' standing, and takes a great interest in the scientific, as well as the practical side of bee-keeping. When he sees an interesting thing he is always anxious for others to enjoy it as well as himself.

MENDELIAN METHODS APPLIED TO APICULTURE.

LECTURE BY F. W. L. SLADEN, F.E.S., GIVEN AT THE LECTURE HALL, ZOOLOGICAL GARDENS, REGENT'S PARK, ON SEPTEMBER 10th, 1912.

(*Continued from page* 465.)

For some years I have been engaged in breeding a golden bee known as the British golden bee. This bee was extracted from crosses between English blacks, Italians and American goldens. The golden character was soon isolated, and thenceforward it was found possible to maintain the pure golden breed, though, as may be imagined, many of the queens were mated with blacks and produced hybrids. No attempt was made to increase the area of the golden colour. The diagram (Fig. 1) shows the colouring of the abdomen of a pure British golden worker. It is interesting to compare this with Fig. 4, which is the colouring of the abdomen of a pure British golden queen. It will be seen that the yellow in the queen extends much further than in the worker. The factor,* or factors, that produce a half yellow and half black abdomen in the worker produce an almost entirely yellow one in the queen. There is no difference in the gametes; the difference is merely a fluctuation in the zygote caused by a difference in the quality and quantity of food supplied in the larval stage. Since the work of breeding British goldens was begun in Ripple Court Apiary, in 1902, a very large number of pure golden queens have been bred; about 1,500 of them were kept until their young workers hatched, and notes were made of the colouring of these. These workers were of two types only, golden and intermediate (see Fig. 2). Not a single black worker was seen. Most queens produced a considerable proportion of each type, but some produced all goldens, and some all intermediates.

It was evident that the queens that produced all goldens had been mated by a pure golden drone, and this was confirmed by the fact that the all-golden families were most numerous (1) from the matings that took place at the end of each season, when most of the drones in neighbouring apiaries had been killed off and only the golden drones in Ripple Court Apiary remained, and (2) from the matings that took place in cool and windy weather, and, therefore, close to the apiary.

There was also evidence to confirm the opinion that the families consisting of all intermediates were the result of the union of the golden queens with pure black drones. Such families were not very numerous from matings that took place in Ripple Court Apiary, but out of five queens mated at a spot nearly two miles

*The word "factor" is here used in the Mendelian sense only.

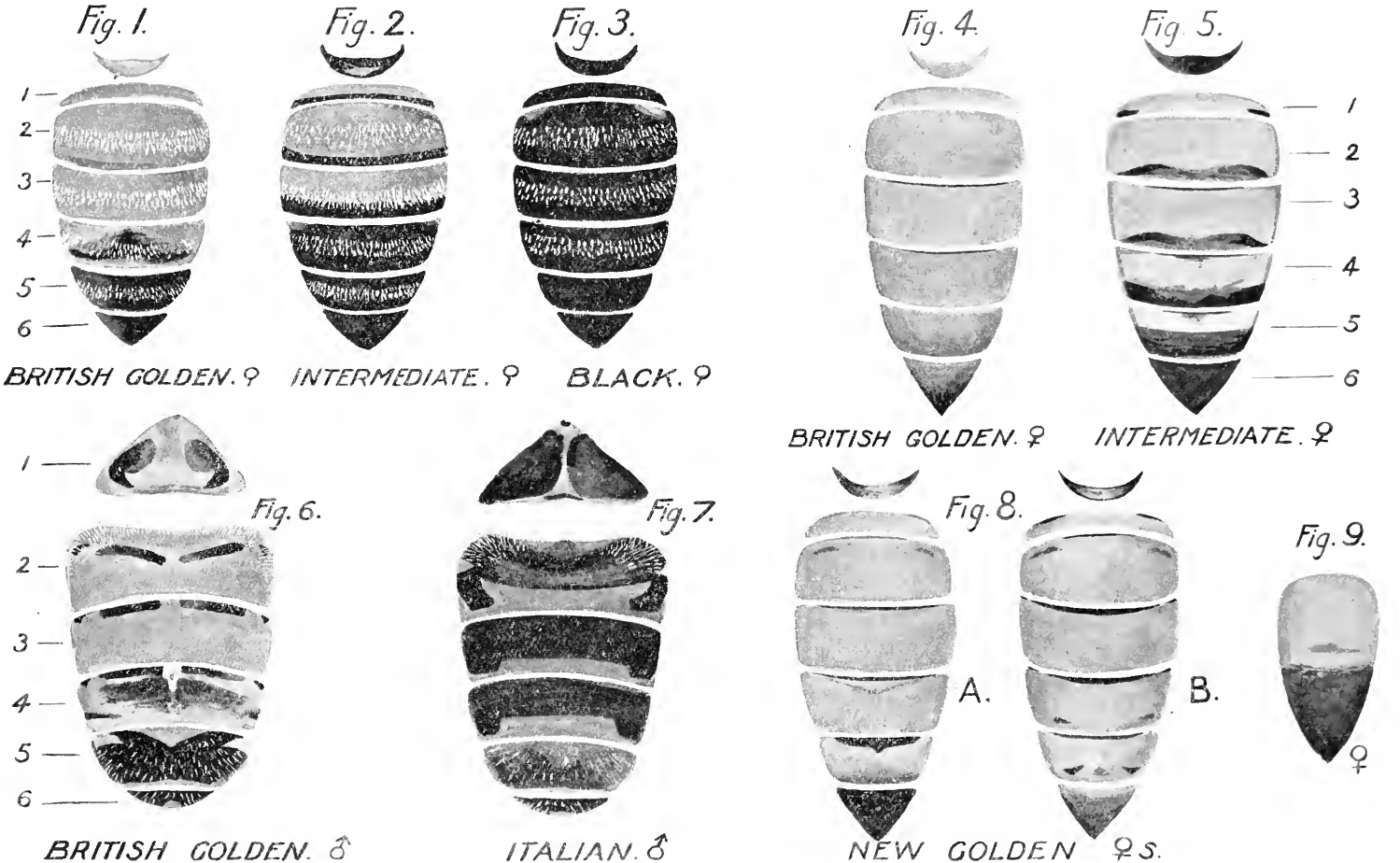

DIAGRAM SHOWING COLOURING OF ABDOMEN OF WORKERS, QUEENS, AND DRONES.

from the apiary four produced all intermediates, and one about nine intermediates to one golden.

Among the families that consisted of both goldens and intermediates which it is reasonable to suppose were the result of mating with heterozygous drones, the two types appeared in varying proportions. A common proportion was about seven goldens to three intermediates, perhaps two to one, but the intermediates were sometimes in excess of the goldens. A case of 90 per cent. intermediates has just been referred to, and at the other extreme it may be mentioned that I have this year been breeding from a queen that produces about thirty goldens to one intermediate; the proportion of goldens to intermediates is the same in her queen progeny as in her worker progeny, and this has been so with every queen from which I have bred.

The queen corresponding to the intermediate worker is shown at Fig. 5. Notice that she, too, is somewhat yellower than the corresponding worker, and that her scutellum is black, not yellow, as in the golden queen. The worker offspring of about thirty of these intermediate queens were examined, and in every case they consisted of goldens, intermediates, and blacks, thus proving that segregation of golden from black takes place. The proportions of the three forms varied in different cases, but the intermediates were usually greatly in excess of the golden and the blacks. In many cases almost every degree of colouration between golden and black appeared, but not in equal numbers.

Out of 475 workers produced by an intermediate queen bred in Ripple Court Apiary this year, practically every degree of colour occurred.

11 had the first three segments of the abdomen yellow, but the edge of the second segment slightly darkened, more so at the sides, and the third segment narrowly edged with black.

47 had the second segment narrowly edged with black, the third segment broadly so.

252 had the first segment also narrowly edged with black, and the second and third segments more widely so.

6 had the abdomen black, with a yellow smudge across the second segment.

16 had it black, with a large yellow spot on either side at the base.

29 had it black with a small yellow spot on either side at the base.

114 had the abdomen entirely black.

Out of eighty-three workers produced by a lighter intermediate queen, also mated this season, nearly every degree of colour was found, but the proportions were different.

6 had the first three segments yellow, the third being narrowly edged with black.

10 had the second narrowly, and in the middle faintly, edged with black, and the black edging of the third segment wider.

52 had the first segment narrowly edged with black, and the second and third segments more widely so; one had the first segment tinged with black, and the second segment broadly edged with black.

6 had the abdomen black, but a spot on either side of the second segment at the base yellow.

8 had the abdomen entirely black.

A few Italian drones were flying in the apiary this year (the first occasion in ten years), and one or both of these queens may possibly have been mated by one, but I do not think it probable.

In trying to analyse all these results, we find ourselves in the dark on a most important point, the drone fathers. But we can see that they indicate Mendelian inheritance. Indeed, up to a certain point, the simplest Mendelian rule seems to be followed. The golden queen mated by the black drone produces the heterozygous intermediate. Mated by the intermediate, she produces goldens, and intermediates, but no blacks. Again, the intermediate mated by the intermediate produces a small number of goldens, a large number of intermediates, and a small number of blacks. But the appearance of an almost continuous series of intermediates in the second generation shows that we are here probably dealing with more than one factor, though, as Punnett has shown in the case of the cross between a "Silky" hen and a "Brown Leghorn" cock, there need not be more than two if it be assumed that they interact on one another in different ways and to different degrees.

It seems unprofitable to speculate further as to the inheritance of the golden and black characters in queen and worker till more evidence has been collected, and we may turn our attention to the more practical question of how far Mendelism can help us in our efforts to improve the bee. A lesson it teaches us that is perhaps of greater immediate value than any other is that if the characters that we want depend on the heterozygous nature of the heterozygotes, the way to get them is to breed together the two pure homozygotes. Thus from the union golden × black we get all intermediates, whereas from the union intermediate × intermediate we get only a proportion of intermediates.

Fortunately, hampered as bee-breeding is by great difficulties, the particular union golden ♀ × black ♂ is practically attainable on a large scale, and, more fortunate still, the intermediate produced by it does possess certain qualities that are very desirable. In the first place, as in the case of heterozygotes in many plants and animals, it possesses the

added vigour due to the crossing. This vigour shows itself in great energy, hardiness, and industry in honey gathering. The intermediate is considerably larger than the golden (in both queen and worker) and slightly larger than the black. With the cross under consideration, golden ♀ × black ♂, which is the only practicable one in this country, the colonies are very populous because they were headed by golden queens, which are more prolific than blacks. An undesirable consequence of crossing bees is the development of an increased tendency to sting, but in this particular cross the temper is usually good, though it becomes hotter in later generations when the black colour predominates.

Reference has been made to the coupling of factors. Colour characters are often associated with various qualities of a useful nature or the reverse. Punnet states that the National Portrait Gallery furnishes remarkable evidence of this in man. Here the pictures of celebrated men and women are largely grouped according to the vocations in which they have succeeded. It is rare to find anything but *blue eyes* among the soldiers and sailors, while among the actors, preachers, and orators the *dark eye* is predominant, although for the population as a whole it is far scarcer than the light.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE PROPOSED BEE-DISEASES ACT.

[8595] I have frequently been asked to give my opinion as to the desirability of an Act of Parliament dealing with bee-diseases; and whether I agreed with that recently formulated by the Board of Agriculture.

Personally, I am somewhat unconcerned, as no bee-disease has any terror for me; but there should be some means of controlling the acts of a vast number of those who keep bees with little or no knowledge of their management, far less about the diseases they may contract, and nothing at all about any method of cure.

The form of the proposed Act, prepared by the Board, could not have been more simple nor more carefully designed, with one or two exceptions. For instance, as an opponent of destruction, I should consider that any known expert and painstaking bee-keeper should have, and may possibly yet be allowed, a time limit of three weeks' duration to show that he can cure any bee-disease under consideration.

In the case of foul brood, almost any careful bee-keeper can save his bees within three days, even if he discards the combs: but without destruction, the combs may be cleansed within three weeks; while infectious paralysis may be definitely cured within ten days.

The fears of many bee-owners that an inspector would drop upon them unawares are now shown to be groundless. It is only when any notification of disease has been given to the local authority that such a visit may be expected*, or should disease be causing havoc in any locality, it is only reasonable that all apiaries within a certain radius should be visited.†

Although the proposed Act is to be worked with existing machinery, it is shown that the local authority will require a bee expert to assist at any inspection; otherwise certainly no proper inspection could be made.

It will be a relief to many long-suffering and persevering bee-keepers who have careless neighbours, to know that at last they may be able to clear away hives and combs that have been allowed to stand untenanted after the bees had died out, and where no sort of persuasion would induce the owners to dispose of the rotting mass.

I have known novices buy out unprofitable apiaries, thinking they had got a cheap lot, when they were simply buying diseased and almost tenantless hives: and some thrown in without tenants, full of rotting brood.

Even some owners that one would fain consider intelligent bee-keepers appear to lose all sense of caution when dealing with bee diseases, as the Editors of this journal can testify. Samples of diseased bees or brood are not infrequently forwarded rolled up in the letter that should have been under a separate cover, and prepared by another person, who had not touched the diseased matter. In some cases, even postal orders and stamps are rolled up with the same diseased mess; and one's first impulse is to toss the whole lot on the fire without more ado.

Bee-keepers of this class will hardly be capable of curing bee-diseases, and they should not become a source of danger to their neighbours. It is this want of caution in various ways that has resulted in the spread of disease. If every owner

* I have repeatedly assured my correspondents that compulsory inspection would resolve itself into compulsory notification.

† I see no reason why large apiaries should be exempt from inspection, simply because the owner or manager should be an expert.

had been careful in the past, and had made some reasonable endeavours to understand more fully the little creatures which he anticipated would give him large returns for nothing, there would be less disease in the apiaries of to-day.

Neither the proposed Act nor the inspector, will help those who will not help themselves, and this should be borne in mind by those who can do nothing without a leaning-post to sustain their courage at times of panic caused by needless fear.

This class of bee-keeper will be little better off than before as regards the "Isle of Wight" disease, which has probably come to stay. In spite of all the facts set before them they will continue to wallow in the mire of their own disbelief and prejudice. Self-help will always be a more valuable asset than any number of leaning-posts.

Neither foot-and-mouth disease nor anthrax in cattle can be exterminated, but is only restricted by the law that is enforced, and at a terrible cost. The source of the former, I believe, cannot be traced, but the latter has in some cases been communicated from the use of certain fields, the germs apparently lying in the ground indefinitely.

The free use of salt on the pastures has been known to keep stock healthy, and this substance is certainly a simple and economic article for the bee-owner to use on the ground all about the hives, as well as in any water the bees are known to visit near the apiary.

I should like to point out that notwithstanding the reckless slaughter of animals in a district affected with cattle disease, there is no unnecessary cruelty in the process. This fact should be brought home to bee-owners who are not so humane. If an owner thinks he has no other way, or is ordered to destroy his bees presently by the inspector, I am compelled to say there is no excuse for any intelligent person who debases that divine intelligence by burning his bees alive. The horrible cruelty of such an act—leave alone the utter folly of destruction in any form—should be brought home to the mind of every reader of this journal, and any known case of "burning alive" might well be brought under the notice of the Society for the Prevention of Cruelty to Animals. —Saml. Simmins, Heathfield.

AN APPRECIATION.

[8596] I think that your "B.B.J." has become still more interesting than ever. For example, the lecture about the South African bees, and again, this day, the article about the Nyasa bee.

Your recent review of Mr. Sladen's magnificent book on the "Humble Bee" was delightful, but also too short. The result of that was to make me buy the book itself. You are the sort of reviewer that an author should rejoice in, *n'est ce pas, mon ami?* And what a splendid and fascinating book it is. I do not want my money back again, although I am not a millionaire, *Deo gratias*. I am happy, and that is even better.—F. de Silva.

HONEY SEASON IN 1889.

[8597] I can give the information asked for by Mr. T. Sleight regarding 1889 as a honey year. It was one of the very best seasons ever known in the south of Scotland. I was then in the novice class of bee-keepers, and had in all six stocks, worked for sections only. These gave a return of 600. One stock yielded 175 sections, with an average weight of 18oz., as they had no dividers. I took over three dozen drawn out sections to fill up for the heather from the stock mentioned above.—Andrew Muir, Kirkcowan.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON.

More Self-help (p. 395).—There are, as all the world knows, two sides to a public question, the inn or near, and the out or off licence. In other words, the proof and the above proof. It is without desire to increase attacks upon the one that I present official and welcoming arms to the other. But there is nowadays so much of the help-yourself spirit that I do not doubt the spread of disease is due to this spirit infecting or inebriating the bees themselves. Of course, there is need for clear-headed effort, as it is difficult to look upon the bright side of things when bees are robbing and disease is rife, but I am not sure that I can consistently preach it, having invariably suggested that what bee-keeping needs is not so much self-help as Smiles.

Finding a Market (p. 396).—Why should not "B.B." have the courage of his opinions and sign his name? One is naturally shy of strange bees and unknown correspondents. But why should he mind criticism? His view is no doubt selfish, but I am convinced that it is sound under present conditions. Why should we endeavour, as we do, to indiscriminately increase the ranks of bee-keepers? And is it right to lure converts by a tale of profits, which in most cases cannot be realised by them? Ask the travelling experts what becomes of such disappointed beginners. True, some good bee-keepers may result; but, upon the whole, is the result good? If non-bee-keepers must be advised, the soundest advice which can be given to them is to go slowly, for the much-advertised profits may not be within their reach. Either the market is occupied or non-existent, or the convert may be unable

to get hold of it, quite likely through some lack of ability of his own. The result generally is, undercut prices and some neglected hives. No doubt the question is difficult, but I find myself in more sympathy with the American cry of "Keep more bees" than with our own of "Be more keepers."

W.B.C. Hive Air-space (p. 397).—The air is a non-conductor, but it would be still more valuable as such if it could be maintained at rest. But what actually occurs when air is between warm and cold vertical surfaces? An up and down current is formed, which transfers the heat. If the air were hindered from flowing, as by cork dust, the hive might be warmed, although it might not be so dry. Chaff and sawdust are less suitable on this account. But I am convinced that cold is not the real winter enemy in this country. Given plenty of sound bees and stores in a dry hive, extra packing is not needed until the spring. And one mouse excluded is worth a dozen quilts. May I strongly advise all bee-keepers to put a baited mouse-trap in each hive. The result may be surprising.

Can Cures and Can't Cures (p. 405).—It is encouraging to find this optimistic spirit amongst those who have actually had experience of "Isle of Wight" disease. I am not sure that Mr. Simmins has had this experience, but he is in touch with those who have actually saved their stocks. If ventilation and requeening will accomplish so much, there is no need for the despair which appeared to envelop the industry at the first onslaught of the disease. The fact remains, however, that cures have not been universally obtained. Such a careful bee-keeper as "D. M. M." has suffered severely, and it is not to be supposed passively. In this connection, I regret to see the attacks upon him for frankly stating his experience. What we want to arrive at is a standard and reliable method of cure, and this is not to be had by suppression of failure. The *can't cures* are quite willing to become *can cures*, and have no desire for their office—beeless, workless, and profitless—to be that of a sine-cure.

Parthenogenesis in South Africa (p. 407).—Whilst I am not in a position to challenge any of Mr. Van Warmelo's conclusions, his suggestion appears sweeping that a fertile worker would probably only leave the hive for mating purposes. Might not this depend upon the degree of her royalty? Is it not likely that she would take flights precisely as do the young bees? Is it not possible that she might even perform worker duties? Otherwise there is little reason for styling her anything but a queen, such as she clearly believes herself to be. In any case, we know that worker bees do spread themselves and enter adjacent hives.

Bait Sections (p. 411).—It is generally the case that these are not so good as those newly built. But this is an argument against their abuse rather than their use. If they induce earlier adoption of the rack, and I am sure they do, the difference in quality may be paid for by the quantity of the other sections. Anyhow, they can always be used at home, where there is, or should be, a demand for honey. When using two such bait sections, I place them in the middle of the second and sixth rows of a twenty-one section rack. The extreme corners are, I find, too far away for the earliest results, although they may help completion.

Raising Queen Cells (p. 412).—There is a mistake in the citation of this plan where it is stated that *two* rows of cells are removed. This should read *three* rows. I find by experiment that the extra room is advisable to have the cells built clear of each other, there is more room for the clustering bees, and cells are better to get at for removal.

WEATHER REPORT.

BARNWOOD, GLOUCESTER.

October, 1912.

Mean maximum temperature, 56·2; ·2 above average.	Barometer, daily mean, 29·93; highest reading, 30·60 on 4th; lowest, 29·18 on 21st.
Mean minimum temperature, 36·8; 8·2 below average; highest reading, 63·2 on 11th; lowest, 25 on 3rd.	Remarks.—1st to 19th, a period of fine weather with much sunshine and absence of wind and rain. Day temperature above average, but frosts almost nightly. Fogs frequent. Bees flying on most days, but not freely. Last part of month wet and mild.
Rainfall, 3·13in. in 15 days, total for 10 months, 35·18, compared with 13·14 for the corresponding period of last year.	
Relative humidity, 85 per cent.	
Cloud, at 9 a.m., 57 per cent.	
Wind force, 22 per cent.	

F. H. Fowler (F. R. Met. Soc.).

Queries and Replies.

[8568] *How Writers Differ?*—(1) Having bought "The British Bee-keepers' Guide Book" I have wintered my bees as described on page 162, by making a shallow box 6in. deep, with a calico bottom and laying it on quilts and filling it with broken cork, as used for packing grapes.

I have also filled inside the dummy and all air-space up with the same material, only to find in this week's BRITISH BEE JOURNAL (Reply 8566) that the air-space is to be left open as intended by the makers. Personally, I fail to find that it forms an air lock, as suggested by a writer in a previous issue (page 397), seeing that neither the body-box nor the outside cover are air-tight. Please let me know the correct way. (2) Size of entrance for wintering. In the RECORD for September, 1912, page 138, we are told to reduce entrance to one bee space, which, I presume means that slides should only be about ¼in. apart? This, I should think, would not allow sufficient air in to keep the bees alive. In "British Bee-keepers' Guide," page 162, one is instructed: "When there is no danger of robbing, open entrances to 6in. (3) The makers of the hive in question recommend placing frames at right angles, and not parallel to entrance. Which do you consider the best, and why? (4) Which is the best material for quilts? Ticking I have tried and it answers, as far as I can see, satisfactorily. I was advised to use American cloth quilts, which, as a matter of fact, were supplied by the makers, as the bees did not propolise this so much, and I certainly found this was the case, but whenever I opened the hive the quilt was entirely covered with large drops of moisture. Is that detrimental to the health of the bees. (5) The inside of the floor-board of my hive was covered, when new, with a shiny preparation like shellac varnish. What was it for, and what are its ingredients, as I want to renew same in the spring? (6) I notice, in a back number of the BRITISH BEE JOURNAL, cyanide of potassium recommended for destroying wasps' nests. How is it used? —NOVICE, Llanberis.

REPLY.—(1) Bee-keepers, like doctors, differ. The writer you refer to, who advises the air-space to remain as it is, finds that this is more satisfactory than having a lot of litter to clear away in the spring. (2) You have not read "Work for the Month" carefully, or you would have seen that the reduction of entrance to one bee space is only intended while feeding, and not for wintering, when the entrance should be open six inches. (3) It does not matter, the advantages and disadvantages are balanced. (4) On no account use American cloth. Either calico or ticking is best. (5) It has been coated with Ayles' "Isle of Wight" cure. (6) By dissolving in water. A piece the size of a filbert nut in an ounce of water is sufficient for each nest. The liquid is simply poured into the entrance. We advise you to stick to the teaching of the "British Beekeepers' Guide Book," which is the most reliable practical work.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

R.-H. (Lincs.)—*Making an Observatory Hive.*—(1) The plate-glass used should be at least ⅛in. in thickness. The price varies in different places, you could find out by getting a quotation from a local glass merchant. (2) Ordinary 21oz. sheet might be used for the inner glass, unless you wish to take photographs, in which case you might get a little distortion, but double glass must always be used. (3) (*a*)Half an inch is the right air-space between the two glasses, and (*b*) 1⅜in. the most suitable comb space.

H. F. (Herts.).—*Artificial Increase.—Bees Robbing.*—(1) Three feet might answer, but it is better to move them further away if possible. (2) Now that bees have gone into winter quarters the robbing will stop, so there will be no need to close the hives as you suggest.

Suspected Disease.

D. L. (Merridale).—We regret to say it is "Isle of Wight" disease.

ABERDEEN READER.—You can do nothing at this time of the year, except destroy any stock showing signs of the disease.

Honey Samples.

APIS DALE (S. Shropshire).—Honey, such as sample sent, will be unsaleable, except for medicinal purposes. You will be wise to take whatever you can get for it.

ANXIOUS (Chelmsford).—No. 1 a light honey, mainly from clover, and good in all points. No. 2 a medium-coloured honey, very thin. It has been gathered mainly from limes, which accounts for the greenish shade you mention. No. 3, a good medium-coloured honey from mixed sources, but containing a good deal of hawthorn.

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Editorial, Notices, &c.

REVIEW.

La Tunisie Apicole, by J. Georges (of the author, 150 rue Bab Souika, Tunis; price, 3.25 francs, or 2s 7d.)—The author is the president of the Tunis Bee-keepers' Association, which was organised in 1901, and in this volume of 221 pages he gives the status of bee-keeping in the Regency of Tunis. The work displays a great amount of labour and patience, for it gives very full statistics regarding bee-keeping, and shows that the author has an intimate acquaintance with native as also with modern methods. There are several tables showing the number of native hives and movable comb hives, also the produce and value of honey and wax in the various districts. There are likewise maps of the districts showing the number of hives kept in various places. Every district is described minutely, and its flora mentioned, so that any wishing to start bee-keeping can obtain the necessary information as to the honey resources of the country. The work will be of especial value to those who wish to commence bee-culture on a commercial scale, for, instead of taking any chance, they will know beforehand what to expect, and be thus spared the expense usually incurred by novices who have to pay sometimes dearly for their experience.

The first chapter is devoted to a description of native apiculture, for we find the Arabs have cultivated bees from time immemorial, and in every part of the Regency the humblest native has bees, and the most miserable tent, if in a district where there are flowers, is accompanied by a small apiary, which furnishes the owner with his honey. The *djeba*, or hives, are generally horizontal cylinders, and it is not unusual to find as many as 500 of them piled together in one apiary, and several such apiaries may belong to one proprietor. The author shows in what a primitive manner the natives cultivate bees and their ignorance of their nature and life history. The second chapter is devoted to modern methods of bee-keeping, which are more especially being adopted by the colonists from Europe.

The statistics show 636 European bee-keepers out of a total of 12,426, the 9,700 being native bee-keepers. There are 7,280 movable comb hives and 212,862 with fixed combs (*djeba*), or a total of 220,142 hives. The total production of honey in 1909 was 1,147,946 kilos., and of wax 114,950 kilos. The value of the honey and wax amounted to 1,291,904.45 francs.

The last chapter is devoted to apiculture in primary schools. We find there are now 105 teachers; in 1904 there were only four who could teach bee-keeping, but now that the Government authorities are giving encouragement, more of the teachers are taking up the subject, and the pupils are all eager to learn.

Tunis is an excellent place for bee-keeping, as in many places the pasturage is abundant, and honey produced from rosemary and thyme, being of excellent quality, is in great demand. When we visited the country we were particularly struck with the richness of the bee pasturage. The book is illustrated with a number of views of native and colonist apiaries and sectional maps showing the resources of the various districts. We congratulate the author on having produced not only a useful, but a most interesting book.

MENDELIAN METHODS APPLIED TO APICULTURE.

LECTURE BY F. W. L. SLADEN, F.E.S.; GIVEN AT THE LECTURE HALL, ZOOLOGICAL GARDENS, REGENT'S PARK, ON SEPTEMBER 10th, 1912.

(*Continued from page* 467.)

In the honey-bee several qualities are associated with the golden and black colours. The goldens are more prolific, they are also less hardy and smaller. They make a peculiar singing sound when they are smoked. These characters I have found inseparable from goldens. It is said that goldens are greater robbers than blacks, and that they distribute themselves more to neighbouring hives, but this I have not proved, and it is certain that they are more often detected doing these things on account of their bright outstanding colour, than they would be if they resembled the bees whose hives they enter.

As regards desirable utility characters that are separately inherited, we are not in the near future likely to make much progress in unravelling the factors that stand for them, and even if we could do so, how can we fix them without controlling mating by isolation? In this country there seems to be only one way, namely, by getting the character in our golden bee. During the last few years I have been trying to fix certain desirable qualities in my goldens. Having found the desirable quality in a stock one must be prepared to sacrifice all one's other goldens in order to give it a chance to get fixed.

A valuable lesson that Mendelism teaches to breeders of all kinds of plants and animals and one that the bee-breeder must not lose sight of, is that, in the words of Punnett, "every possible variety arising from a cross appears in the second generation if only a sufficient number is raised, and of all these different varieties a certain proportion of each is already fixed." More can be accomplished by a careful analysis and isolation of the individuals of this generation than by

years of breeding by selection on the old lines. The fear of losing the original variety by crossing is unfounded, for it can be recovered in a fixed state with all the superadded vigour that follows from a cross.

Mendelian analysis shows that many of the domestic breeds of plants and animals have been obtained by the removal of existing factors, not the addition of new ones. This process has also been going on in nature. The Darwinian idea that natural selection has built up new characters can now be expressed more precisely, it has merely selected from factors already existing. This explains why new varieties often appear suddenly, and we are no longer under the necessity of attributing some special use to the individual to characters, such, for instance, as yellow and black colouring in the bee, for there is no reason why a character not actually harmful should not exist and persist. How the factors carried by the gametes that we now know to be the foundation of variation originally arose we can only conjecture to have been by some disturbance in the processes of cell-division in the formation of the gamete. There seems to be no reason why new factors should not come into existence at the present day, but there is no need for us to suppose that the development of a new factor is anything but extremely rare, when we consider that in a species whose gametes carry only twenty factors, at *least* 1,048,576 varieties are possible.

The word purity has acquired a new and a more precise meaning in the light of Mendelism. It is a question of gametes. If two similar gametes unite, no matter what the nature of the parents from which they arose, the resulting individual is pure and will breed true. On the other hand the phenomenon of dominance may make an individual appear pure, but only breeding tests will show whether it is really so.

We must remember that underlying Mendelism is the doctrine elaborated by Weismann that characters acquired during the lifetime of the individual as the result of changes in treatment or environment cannot be transmitted to the offspring, though it is true environment may and does exert selection in individuals carrying different kinds of gametes. It is, therefore, useless to try to fix acquired characters—fluctuations, as they are called—by breeding, unless the treatment that causes them is always applied, as in the case of worker characters as distinguished from queen characters.

Most of the characters in the bee that we wish to improve are in the workers. How, it may be asked, can these be propagated, seeing the workers are sterile? We must do it through their reproductive sisters—the queens. It is comparatively easy to propagate the character if it is recognisable in the queen, even though much changed, as, for instance, the colour character. But we may wish to propagate a character that is not recognisable in the queen, such as industry. We may wish, for instance, to get the golden queen containing the factors contained by a particularly industrious golden worker in a hive where most of the workers are less industrious. Unfortunately, we have no means of discovering such a queen, and characters of this kind that show themselves in individual workers are almost sure to be lost unless we can find them in a large proportion of the workers in a colony. For such characters we are compelled to test our bees in colonies, not as individuals. This is rather a serious limitation, for while we can study the characters of thousands of individual workers, comparatively few colonies are available. On the other hand the enormous number of workers that a queen produces helps us very much in the study of what gametes she is producing, and as they are always surrounding her and continue to be produced for years we can study them at leisure.

And here I may make a few remarks on estimating the proportions of the different coloured offspring of a queen. My practice is to do this, if possible, on the twenty-second or twenty-third day after the queen begins to lay. Then only a few hundred of her workers have hatched, and they can be distinguished at once from the other workers in the hive by their downy, soft, and immature appearance. At this stage one can, with practice, estimate fairly accurately almost at a glance the proportions, if only two types are present. Often there is a risk of robbing, and then it is not safe to keep the hive open more than a minute or two. Later, when there are workers in all stages of immaturity, it is less easy to estimate the proportions. It is not usually possible to ascertain the proportions from mature bees until the spring, and then the results may be rendered inaccurate by the presence of bees from other hives. For accurate work it is best to chloroform a few hundred bees, and then pick out the young ones and count out the different varieties of them before they have time to recover.

I should like to say a few words on colour inheritance in drones. Fig. 6* shows a British Golden drone. The drone has seven dorsal segments—one more than the worker or queen, but only five of these are seen from above, for the first segment occupies the basal end of the abdomen, and the last one is underneath. I should

state that British Golden drones vary a little in the extent of the black on the fourth segment. We all know that the drone is always produced parthenogenetically, *i.e.*, without sexual union. The production of a male by parthenogenesis is rather unusual in Nature. More often, as in Aphids, it is the female that is produced parthenogenetically, and then the species can reproduce itself through several successive generations without fertilization, and while this kind of reproduction is going on the male disappears completely, but with the bee this is not so. Fertilization by the drone is needed for each fresh generation of workers and queens. Most of us have proved to our own satisfaction that the drone can be produced parthenogenetically. A colony loses its queen in winter, and a new queen is reared, which fails to get fertilized, with the result that she produces drones only. But are *all* the drones produced by a *fertilized* queen the result of parthenogenesis? Perez, in 1878, thought not, for on examining 300 drones produced by an Italian queen, fertilized by a French black drone, he found 149 which he thought indicated hybridism. It is clear that if it is true that the drone is always produced parthenogenetically, the queen, provided her gametes are pure, must produce pure drones, no matter what kind of drone has fertilized her. I have bred drones from about half-a-dozen of my golden queens every season for some years. Some of these golden queens were producing all golden workers, others certain proportions of intermediates, others all intermediates. Now the drones from the queens producing all golden workers were all golden, as shown in Fig. 6*, though they varied a little, as were also the drones from most of the queens producing some or all intermediate workers, but two of these queens produced certain proportions of darker drones. One of these was a queen raised last year. The workers she produced were all intermediates. On May 29 of this year I examined seventy-seven of her drones; twenty-six had the first four segments largely yellow, ten the fourth segment smudged with black, twenty-seven had only three segments yellow, the fourth segment being black, twelve had only two segments yellow, and two had the abdomen entirely black, with only the edges of the first and second segments yellow. One's first thought in trying to explain this remarkable result is to suspect that the queen was not producing pure golden gametes, but the facts that the queen had the scutellum, and the abdomen almost to the tip yellow, and that a queen thus coloured had never been known to produce a black worker, oppose this view. On the other hand, up to 1908 golden queens, with the scutellum darkened, were occasionally produced, and black workers were often bred from these, indicating they were heterozygous. But latterly the separation between golden and intermediate has been more complete, and such queens have not been produced.

This incomplete separation is additional evidence of the presence of more than one factor for colour. In review of the situation, the production by a golden queen of dark drones cannot be said, in the light of our present knowledge of the inheritance of colour, to upset the universally accepted and apparently well-founded theory that the drone is always produced parthenogenetically, but, in view of the fact that in all our efforts to breed bees this theory plays a leading part in guiding the operations, such cases as this that seem to shake it should receive the fullest investigation. If we could control mating they would be certain to add valuable facts to our knowledge of the inheritance of sex.

Fig. 7* is of an Italian drone bred from a queen received from Bologna. Some of the drones produced by this queen had a more distinct tinge of yellow on the second segment, but none showed so great an extent of yellow as that exhibited by the British golden drones. It was the great variation in the colouring of the Italian drone—some are almost black—that led Perez's critics, for his statement raised a storm of opposition, to reject his idea of hybridism.

The inheritance of colour in the Italian bee is remarkable in two ways. First the workers all come perfectly true to a colour pattern very like that of the cross between golden and black, though somewhat darker as a rule, and varying in different localities. Secondly, the queens, on the contrary, show immense variation, some are almost as yellow as goldens, though they lack the yellow scutellum and they have at least traces of dark spots on the segments. Others are broadly banded with black and have the last segments black. Are these differences in the queen mere fluctuations, or do they stand for factors in the gametes which do not manifest themselves in the workers?

The breeding true of an intermediate condition of colour such as occurs in Italians has been found to be quite in accord with Mendelian views in a case where only two factors were concerned, when it was assumed that they interacted on one another in a certain way and to different degrees.

During the past two months I have been taking steps to secure a cross between a British golden queen and an Italian drone, and I had hoped to have been able to show you this evening what that cross is like. But the cold, dull, and wet

weather we had in August made the queens like the holiday makers, disinclined to leave home: the few that flew out and got mated during that month were nearly all mated late, and their young are not yet out.

Fig. 8A* shows a remarkable coloration found in a British golden, bred this season. Fig. 8B* shows an unusual colouring in several golden queens reared in August from a British golden queen bred this season that produces all goldens. Whether these are fluctuations caused by cold or some other agent, or whether they are new colorations must be left to my successor, whoever he is, to say; but I have always been on the look-out for variations in goldens in the direction of darkening, for it is probable that only by isolating such a variation shall we succeed in much improving the hardiness and honey-gathering qualities of goldens. That a chill during the later stages of development darkens the yellow colour and causes the black to spread in queens, every breeder of Italians or goldens knows. Fig. 9* shows a curious and striking distribution of colour that I have obtained in intermediate coloured queens chilled during development.

Till now we have been considering only the ground colour of the abdomen. But there is another character that greatly affects its appearance in the worker, and that is the presence or absence of a pronounced band of short white hair on each segment, except the first and the last. This band is well developed in the Italian bee, but feebly so in the English black bee. The only outstanding difference between the appearance of the English bee and that of the Carniolan is the high degree to which these bands are developed in the latter race, giving the individuals a grey appearance. It would be interesting to ascertain if the inheritance of these bands follows Mendelian rules.

In conclusion I would again draw attention to the value of the bee produced in the first generation of a cross between two distinct breeds. When a bee-keeper introduces a new race or breed into his apiary he has two, not one, new bees to study, the pure breed and the half-breed, and in addition the host of varieties that follow in the second and later generations. The generality of bee-keepers do not sufficiently distinguish between pure breds and half-breds. The term "Italian," for instance, is often applied indiscriminately to the young of an imported Italian queen, and the young of her daughters, reared and mated in Britain, and even sometimes to the later generations—in fact, to any bee that shows yellow bands. In this way many observations that have been made about Italians have failed to be of value, and have even been in conflict, one bee-keeper blaming them for lacking the very qualities that another bee-keeper praises them for possessing. Italians are a very fine race, easily first in the opinion of the majority, taking the world all over, but in this country owing to our cool summer climate they seldom show themselves to the best advantage; Italian-English half-breds, however, behave differently and usually produce excellent results. One of the best qualities of Italians is their undoubted power of resistance to the disease that in the land that is about to adopt me is known as European foul brood, and I may now call "melting foul brood" to distinguish it from the ropy form. Whether this most useful quality is shared by the Italian-English half-breds, and if so to what degree, it would be well worth while to try to discover. If so, bee-breeders might succeed, with the aid of Mendelian methods, in separating a highly resistant strain, just as Professor Biffen, of Cambridge, has by this means been enabled to bring out a rust-resisting variety of wheat. We might, perhaps, breed a strain to resist that still greater scourge, the "Isle of Wight" disease.

The fixed types of bees that occur in Nature in different localities should always be named after the localities from which they come, for variation in appearance is so limited that it often fails to enable one to separate one type from another. For instance, we have no right to suppose that the British black bee is the same as the American black bee, which seems, indeed, to have had a Spanish origin. We have seen how closely the golden and black hybrid may resemble the Italian in appearance, and there are several different kinds of Italians in the Alps of Northern Italy and Switzerland. It is hardly fair on the editor of the BRITISH BEE JOURNAL to expect him to tell you what kind of hybrid you have in your apiary from a dead bee or two sent in a tin matchbox.

To those who wish to know more about Mendelism I can heartily recommend Punnett's book, entitled "Mendelism."

An account of the work of breeding the British golden bee in Ripple Court Apiary was published in the BRITISH BEE JOURNAL two years ago.

*For reference to Figs. mentioned, see illustrations in BEE JOURNAL, Nov. 21, page 465.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

THE CARE OF APPLIANCES.

(*Continued from page 456.*)

The Extractor.—Appliances made of tin require careful attention or rust will make them deteriorate or become utterly useless in a very short time. It is no unusual thing to see extractors put on one side after the completion of the

season's work, without the slightest attempt at preservation or even cleansing. Repeatedly I have seen at least half a pound of honey remaining at the bottom. Exposure to air (for the extractor is not air-tight like a lever top tin) causes the acid in the honey to become active and it very quickly eats its way into the tin.

Immediately after the last extracting is done take the machine to pieces, cleanse and scrub each part with a strong solution of boiling soda water, dry it thoroughly with a soft cloth and then place it in front of the fire, so that it becomes quite hot; the moisture which has got into the crevices, and which cannot be reached by means of the cloth, will thus evaporate. The outside of the bottom is the most vulnerable part for the rust to attack, being convex it provides a closed chamber for the collection of moisture when the extractor is standing on the floor. It should be protected by giving it a couple of coats of paint or enamel. If these were not obtainable I would use Brunswick black or even gas tar. Next polish the inside and outside with whiting or any other polishing material, then give a thin coat of vaseline. The cages, cog gearing and other small parts should also be coated with vaseline before putting together again. Paraffin should not be used as a rust preventer (although rust can be removed from tin by its means), it will taint the honey when next the extractor is used. Treated in this manner each year, the extractor will last a lifetime. When brought out for use the following season the vaseline should be thoroughly washed off every part with hot soda water again. All the wearing parts, such as cogs, bushes, and cone centres, should be oiled with neat's-foot oil, so that it runs freely and no undue racking takes place, which might cause the stripping of the cogs or enlargement of the bushes.

Honey Tins.—These, when purchased, should be washed out with hot soda and water to remove the taint of the soldering solution used in the making. They can then be well heated to dry them, on the plate rack or kitchen hob, and while hot a little vaseline rubbed on the inner rim of the lid and outer rim of tin top, and sealed down. A coating of vaseline on the outside will keep them from rusting for years. When storing away after filling with honey, it is well to coat them again with vaseline on the outside. Before packing for despatch to a customer this is rubbed off and the tin has a bright fresh appearance. It is not good business to send out honey tins coated with rust.

Ripeners.—These should receive the same attention as the extractor. In both cases particular attention must be paid to the tap. The lever should be removed for cleansing purposes, otherwise a black deposit will be formed, which will spoil a good deal of honey when next used.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE DISEASES OF BEES BILL.

[8598] In writing about the Bee Diseases Bill, it is quite impossible at this stage to avoid covering old ground; but as I am an infrequent contributor to your columns, I will ask you to bear with me if I tax your patience a little now. I have been a reader of your journal since its first volume, and I have kept a large number of hives for very many years; at present I have over 1,000 stocks, so that I think most people will admit that I ought to know something of bees and bee-keeping.

Lest it should be assumed that the bee world is practically unanimous in its desire for legislation, I should like to call the attention of your readers to some rather striking facts: Nearly all the supporters of the Bill are members of the British and County Bee-Keepers' Associations; no one will claim that more than 10 per cent. of the bee-keepers in this country belong to these associations, and it would be a very bold man who asserted that more than 10 per cent. of the association members are actively in favour of this Bill: probably not more than 1 per cent. of British bee men are in favour of it at all, whilst many of its warmest supporters are would-be Inspectors under it! Against it you have, so far as I can learn, *all* the considerable bee-keepers and a vast number of smaller ones! I maintain that now, as was the case in 1905, the great majority of hive owners are opposed to the Bill; and this in spite of the fact that the weight of the British Bee Journal, of the journals that publish a bee column, and of the associations is all on the side of promoting legislation. Like most people who are not blinded by prejudice, I hold that where legislation for bees has been attempted it has not been by any means a success. I have nothing to urge against the principle of legislation that might assist in enabling us to stamp out bee diseases, but I do say that the "experts" whom I have met are not qualified to use such extensive powers as might be conferred upon them under this Bill. If those worthy men possessed one-tenth of the knowledge and skill they pro-

fess to have, would they not find it vastly more profitable to keep bees for themselves. If the Inspectors to be endowed with compulsory powers by this Bill are to be those who are labelled "experts" by the associations, I fear that bee-keepers will find them an infinitely worse scourge than all the bee diseases put together, and if these are not to be the men, who are? The Board of Agriculture say that they will appoint none but suitable men, but the Bill provides that these appointments shall be made by the County Councils, and it is only natural to suppose that these bodies will be influenced by the advice of the County Associations. In my experience, and in that of most practical bee-keepers, the average county expert is far more likely to spread disease than he is to lessen it—I could give many instances of their doings to prove this. Unless these men have had the practical experience of managing numbers of stocks successfully, they are surely not fit to be sent out to exercise compulsory powers over those of their neighbours; but if they have had such experience (they do not appear to!) they must be worth a good deal more than they get.

Are bee-keepers aware that the conclusions of the various scientists—American, Continental and British—are much at variance both as to the causes of bee diseases and as to the most effective treatment for them? This is undoubtedly the case; the latest reports from Drs. White and Phillips, for instance, absolutely contradict that holy writ of English bee-keepers, the findings of Cheshire and Cheyne. That being so, would it not be wise for us bee-keepers to unite in petitioning Parliament against the Bill? Already I have heard from a great many bee-keepers who are opposed to it, and I venture to invite such of your readers who favour a petition based on the following grounds to communicate with me at once so that I may add their names to the list of our supporters.

The suggestion is that as at present very little indeed is definitely known about bee diseases, and as legislation in other countries has not proved a success, it would be well to postpone the operation of this Bill for the present, and that in the meantime a very strong committee should be appointed to investigate the whole question, not merely to work in laboratories under extremely artificial conditions, but to work on bee farms, and to consult with scientists in America and on the Continent as well as with practical bee farmers. When this committee shall have arrived at any definite conclusions as to the causes of bee diseases, and as to the proper treatment for diseased bees, it may proceed to draw up plain instructions for bee-keepers, and to *train* Inspectors for work under the Bill.

To legislate first and to learn afterwards may please the official mind, but it is not good business! Under the present Bill the Board of Agriculture may instruct the Inspectors to proscribe certain areas, and to bar the bee products in such cases from the market, while, of course, they would be very unlikely to bar any honey or wax from foreign or colonial sources! Further, they may forbid the use of skeps or fixed comb hives, and thereby exclude what, in my humble opinion, is the most reasonable and the most profitable form of bee-keeping. Heresy, no doubt, but I can prove it! Incidentally they would work a grave injustice to the cottager bee-keeper whose interests our Bill-promoting friends are so careful of.

One hears a lot about the necessity for a Bill to enable us to deal with the refractory bee-keeper who has diseased bees. With a little tact it is generally quite possible to manage such matters. If you have the requisite knowledge put it at the service of your neighbour; if you have not, your interference, whether as bee-keeper or as Inspector, would rightly be resented. I have had much experience in these matters, but rarely any trouble in inducing the offending owner to take measures himself to prevent the spread of the disease, or to allow me to do so.—C. B. Bartlett, Witney, Oxon.

[The striking facts that our correspondent adduces are amongst the weightiest reasons for legislation. It is probably true that not more than ten per cent. of bee-keepers belong to associations, and this is precisely where the danger lies. Notwithstanding our correspondent's want of faith in the qualifications of experts—and he appears to have been unfortunate in respect of those with whom he has come in contact—it must be admitted that visiting experts have done a great deal to diminish foul brood amongst the members of associations. When it has been reduced to three per cent., as is the case in some associations, it is clear evidence that their work has been done efficiently. There are many bee-keepers who do not belong to any association, although they derive the benefits that have accrued from their formation, and others who do not even take the trouble to read a bee paper or book to keep themselves informed. These are a real danger, as they will not allow an expert to visit their apiaries, let their bees die of disease, and allow the empty hives reeking with foul brood to remain on their stands and infect the neighbourhood. Such bee-keepers are a menace to the industry and prevent disease from being stamped out. It is to get at such that legislation is needed. This country stands almost alone without bee legislation, and it is for this reason that the industry does not advance more rapidly, or as it has

done in other more progressive countries. Notwithstanding what Mr. Bartlett says, there is ample evidence that legislation has been of benefit in every country where it has been tried, and it is wrong to assume that it has not proved a success. Take for instance its effect in America. Mr. Root, writing to us on the subject, said, "there is any amount of evidence to show that had it not been for these laws, in some of the States at least, bee-keeping would have been entirely wiped out. As the result of the inspectors' work disease has been kept under control, and so far curtailed as to leave very little disease. Wisconsin, Michigan, and New York will certainly come under this heading, and it is in these States where the disease has been the worst."

Our correspondent is certainly wrong in supposing that scientists are much at variance as to the cause of bee diseases. They are all agreed that they are caused by various micro-organisms, and those who know anything about the subject will understand that symptoms in different countries may differ under varying conditions. It is not surprising that the latest reports do not appear to agree with the findings of Cheshire and Cheyne, and the only wonder to the scientist is that there should be so little difference and that our investigators knew so much thirty years ago. No science has made more rapid progress during that time than bacteriology, and what to the uninitiated appears as a contradiction is only the natural result of the progress made in the science, due to more perfect instruments and methods of research. The work our correspondent suggests should now be done by a committee has already been accomplished, and it would only be going over well trodden ground to repeat it. There are sufficient experts already quite capable of acting as advisers, and those who have not passed a recent examination or have shown that they have kept pace with the knowledge gained since their examinations, would certainly not be appointed until they had properly qualified for the position. The arrangements now being made by the B.B.K.A. for their training will produce experts equal to any abroad.

The first clause of the Bill would authorise the Board of Agriculture to prevent the importation of honey and wax. It, however, does not authorise them to forbid the use of skeps or fixed comb hives, so there is no fear of injustice to the cottager whose interests the promoters of the Bill have carefully guarded.

We are sorry that we cannot share our correspondent's pessimistic views, but still think that legislation would be as great a benefit here as it has been in other countries, and enable bee-keeping to become a staple industry.—EDS.]

NOMENCLATURE.

[8599] Referring to the remarks of D. M. M. in last week's JOURNAL (p. 463) on Nomenclature, is he correct in his elucidation of the haziness surrounding "stock" and "colony"? That the confusion exists there can be no doubt, but when properly cleared up, surely the boot is on the other foot.

Is not a colony inclusive of the country a people dwell in? Should not, therefore, a colony of bees include the hive *they* dwell in? Similarly, in speaking of a "stock," we usually imply thereby the individuals only, cf. "Men and brethren, children of the stock of Abraham." (Acts xiii.)

And in so far as we cannot well conceive of these without their adjuncts of clothes and furniture, so we may include in the stock of bees their combs and frames, etc. I therefore suggest to D. M. M., with all due deference, that he should promulgate the sound doctrine that a colony of bees means a hive with all its inhabitants, just as a human colony now means the land with all *its* inhabitants; and that a stock of bees means the "queen, workers, drones, brood eggs, honey in the hives," and their essential concomitants of "cells, combs, and also the frames on which the fabric is constructed," instead of the heresy he preaches this week. It would thus be obvious that stock may be in a travelling box, but a colony could not.—A. B. H., Essex.

[Words have different meanings, and in natural history *colony* means a number of animals or plants living or growing together, and does not include any surroundings, therefore a colony of bees does not include the hive they dwell in. In Dr. Phinn's "Dictionary of Practical Apiculture" a colony is defined as "the bees of a stock. A complete colony consists of queen, workers, and, at a certain season, drones." To speak of a *queenless* colony is correct, as it is equivalent to saying that the colony is not full or perfect. So also *stock* has several meanings, and one refers to lineage, the original progenitor, the race or line of a family, another to a race or variety of a species. Applied to bees a stock includes colony, hive, comb, stores, and all that is necessary for the normal existence of the bees. *A hive* does not include a colony, just as a colony does not necessarily include a hive. It is correct to speak of a colony in a travelling box.—EDS.]

THE BEE DISEASES BILL.

[8600] With a view of clearing up some obscure points in the Bee Diseases Bill now before Parliament, I wrote to Sir Rufus Isaacs, K.C., M.P., and received the enclosed reply. As it is a matter of general interest to bee-keepers,

and will, I think, remove some of the objections they may have to the administration of the Act when it comes into force, I shall be much obliged if you can publish the same in your next issue.—A. D. WOODLEY, Reading.

2, Garden Court,
Temple, London.
Nov. 22nd, 1912.

Dear Sir,—In further reply to your letter of the 13th instant, I enclose you herewith a copy of a letter I have received from the President of the Board of Agriculture, which I think will meet your suggestions.

I am,
Yours faithfully,
RUFUS ISAACS.

[COPY.]

You sent me a few days ago a copy of a letter which you had received from a constituent, urging that the Bee Disease Bill should be amended by the addition of a clause requiring owners to declare the presence of disease in their apiaries. The Bill, as you know, is to enable the Board to make such orders as they may think expedient, and you can assure your correspondent that it will be an essential part of the Board's procedure to require the notification of disease. As, however, experience will no doubt suggest desirable variations from time to time with regard to the kinds of disease to be notified, the mode of notification and the authority to whom notification is to be made, we thought it more convenient to leave this point to be dealt with by Order instead of providing for it directly in the Bill. The Board are also alive to the necessity of providing against the carrying of infection from diseased to healthy hives, and their procedure will be so framed as to minimise this risk. I am glad to have this opportunity of explaining these points, on which I know there is some misconception among bee-keepers.

SUBDUING BEES.

By Somerset.

It is perhaps safe to say that the majority of bee-keepers never learn thoroughly how to subdue and control their bees during manipulations.

Visiting experts are only too familiar with those who open their hives without proper preparation, causing everybody in the neighbourhood to be stung; with others who through fear born of experience, deck themselves in extraordinary and ludicrous garments for their protection while their hives are being opened for them; and again with others who, fearful of being attacked, "will not come near" under any circumstances.

Lecturers, too, grow accustomed to hearing such remarks as "I should like to keep bees, but they have a particular dislike for me," or, "I had to get rid of my bees because the gardener was afraid of them."

Even in examinations for expertships bad preparation and control of the bees is frequently a cause of failure. It is not a good omen for the candidate who has got his bees into an irritable state to see his examiner obliged to don his veil at an early stage in the proceedings. In almost all cases where a manipulator is badly stung, the fault is directly due to negligence or ignorance on his part and not to the bees. Certainly there are cases (perhaps one per cent.) where stocks are exceptionally vicious. As a rule such stocks should be requeened, although it is often noticeable that an unusual tendency to sting is associated with exceptional vigour and industry.

Bee-keepers are often at a loss to account for the apparent readiness of their bees to attack them. Almost all such cases may be accounted for, however, by one or more of the following common mistakes in management:—

1. Standing or working in the line of flight of the bees leaving a hive. (Those returning with their loads can hardly be provoked.)

2. Alarming the guards by kicking or jarring the hives ever so slightly, or by removing the cover noisily before the bees have been subdued.

3. Making quick or jerky movements, whether in walking or manipulating. Bees are always incensed by quickly moving objects near them. Beginners especially are apt to withdraw frames from their hives much too quickly. Slow and deliberate movement in the withdrawal and replacement of frames is one of the marks of the experienced and skilled manipulator.

4. Examining a hive when in a hurry. There should always be sufficient time to work slowly and deliberately.

5. Talking loudly when holding a frame of bees near the face. Few things are so irritating to them as hot, badly-smelling breath, and they invariably try to attack the face from whence it comes. When the breath is expelled from the nose, however, it seldom reaches the bees and so causes no trouble.

6. Manipulating while in a state of great perspiration. The objection of the bees to this is doubtless on account of the unpleasant odour.

7. Exposing the contents of a hive for too long a time, say more than ten minutes. A few robbers attracted by the scent of the open hive are quite sufficient to cause suspicion and anger. Only a few of the frames should be uncovered at one time and these in turn should be covered while the others are being examined.

8. Continuing to manipulate after one or two stings have been received. The smell of the sting poison acts as an irritant to all the bees in the neighbourhood. The stung parts should be washed or covered with a deodorant before the work is continued.

9. Examining a hive during thundery weather, or at any time during the summer when the bees are kept at home by unseasonable conditions. It is a remarkable fact, they are specially inclined to ferocity when thunder is prevalent.

10. Examining bees when they are being robbed, or when robbing tends to become common, as during the first few days after the honey has been taken.

11. Examining a hive which has no stores.

12. Crushing bees during manipulations and so causing them to express their sting poison.

It is important that hives should be so situated that in their outward flight the bees should not encounter passers-by, nor have to pass over ground which has to be tilled during the day-time. The movements of a labourer or of an animal's tail are not long tolerated within twenty yards of the hives, and on this account bees frequently get an undeserved reputation for ferocity. Should there be no choice of location, the bees can always be made to fly high by placing an obstacle such as a row of peas or scarlet runners near the hives.

The preparation of bees for manipulation (in whatever way it is done) depends upon two well-known facts, viz.: That when alarmed they invariably rush to their stores and gorge themselves with them, and that when well-fed they are disinclined to sting.

The necessary state of alarm is commonly brought about in one of two ways, both described in the "Guide Book," viz., by applying a cloth strongly smelling of carbolic acid to the tops of the frames, or by projecting smoke into the hives. Although the latter method is almost universally adopted, a few remarks about the use of the carbolic cloth may not be out of place here.

Amongst the points in its favour are the following:—It takes up little room and can be carried in the pocket; it is immediately ready for use at any time if the acid is occasionally renewed; it is very suitable for rapid work, especially in the hands of the skilled manipulator; it is antiseptic; it is inexpensive.

On the other hand the following disadvantages are associated with its use:—Unless the acid has been properly diluted, the cloth, when freshly prepared, will stain and burn the fingers; if not kept rolled up tightly in a receptable, such as a small tin, it rapidly loses its efficacy and may fail to subdue an opened stock of bees at a critical time; it is difficult to remove the smell of the acid from the fingers; it tends to drive the bees away from their stores, whereas smoke injected at the entrance of the hive has the opposite effect; if left on unwittingly for too long a time, the bees are driven away from their brood and sometimes even out of their hive; the wind often blows the cloth away while the bee-keeper's hands are engaged in some important operation; people are sometimes met with who think that since carbolic acid itself is a germicide, the cloth cannot convey disease germs and they consequently use it indiscriminately on both healthy and diseased stocks.

The smoker, although more troublesome to keep ready for use, is much more generally used than the carbolic cloth, being safer in the hands of novices, and more efficient, because the smoke can be projected to places inaccessible to the cloth.

(To be continued.)

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Inspection.—"Five years ago fourteen per cent. of our colonies in Colorado were affected with foul brood. In 1911 less than two per cent. were found infected. Moreover, a car-load of bees from Kansas, where foul brood is prevalent, was kept from being taken into our State." And yet some of our would-be lights on bee-keeping say that inspection does no good. Presuming that the "car-load of bees" were diseased, what a blessing an Act can become.

Curing Loafing.—Try this plan: Lean a drawn-out comb against each outside cluster and the bees will soon make for the comb. When eight or ten of these combs are covered with bees put them all in one hive; screen them in and carry to an out apiary. In three or four hours they will be glad to have a virgin queen, and such a colony will work with the vigour of a new swarm. In past years I have founded colonies and made up many nuclei on this plan when bees in skeps declined either to swarm or work.

Windbreaks.—"We were satisfied last year, and especially in the spring, that hives having entrances facing a stretch of country without a windbreak suffered much more than other hives in a more screened position." Hives with exposed entrances were invariably in a worse condition than those protected. Those who have experimented found that a high, close fence was not so good as an open fence or a low shrubbery, by which the

force of the wind was merely broken just enough to check the full blast.

Eggs in Cells.—A beautiful photograph of eggs in cells formed the outside cover of *Gleanings* of 15th October, and on pages 657 and 658 others show a distant and a near view, all three being admirable reproductions. In regard to the position of the egg, the editor makes the following comments:—"If the comb is held vertically the egg, when it is first laid, does not lie in a horizontal position, but inclines downward towards the centre of the cell somewhat. The second day it inclines still more, and the third day it lies almost flat on the base of the cell. It is thus possible to calculate more or less accurately the time when the egg will hatch." A full comb of eggs forms a very pleasing picture looked at by the naked eye when the frame is lifted from the hive, but it becomes more interesting still when magnified. Each egg in the ovary of the queen appears alike, but in the cells they are found to differ considerably in size and also in colour. The beautiful pearly-white, so generally remarked, shades off to a cream colour.

Smoker Fuel.—"Try hurlap in your smoker. I find it surpasses any other fuel I have ever used for cheapness and convenience. Nearly every one has some old hurlap bags lying around." Quite recently I had a specimen of what can be got from an old sack in the way of smoke. The blast was a powerful one, while the pungent smoke acted as an efficient intimidant.

Winter Stores.—The *Review*, and other American bee-papers, warn readers against the danger of loss from insufficient stores. One correspondent writes:—"We have had to feed the bees the heaviest this fall that we ever had to do. We have fed over 5000lb. of sugar." The Editor adds:—"Other reports complain of a scarcity of fall honey, and mention heavy feeding. Here is where the careless bee-keeper will come in for a heavy loss. Take nothing for granted." Apiarists on this side should take the warning, because owing to the poor storing, thousands of stocks will have insufficient stores to carry them over the spring breeding.

Good Wishes.—The *Canadian* is "crowing over" the acquisition of their recent importation from this country. Our loss is their gain. "Mr. Sladen's advent among us has given universal satisfaction, and is regarded as a matter for self-congratulation." Best wishes from this side. As Dr. Miller remarks, however, "The Canucks can't keep him to themselves; he is too big a man." I am astonished to note that Mr. Sladen is seemingly prepared to treat the Loughton canard in a serious fashion!

Mendelism.—Bee-papers on the other side are discussing the subject in a quasi-scientific way. Dr. Bonney has "an opinion of his own," and it is that "bees are incapable of further development, progress having ceased untold ages ago." He holds with another writer that "the bee is the last word in development." I must be content with quoting only one sentence. "To those who understand parthenogenesis, and every bee-keeper should, it will be plain that crossing a hybrid drone to a hybrid queen, the mongrel strain can be kept up indefinitely, or if the Black queen be used the Black will in four generations extinguish the Italian (or the Italian in the same time will extinguish the Black), so that no matter in what light we look at it, Mendelism will not apply to the parthenogenetic insects, according to all information now available."

Notices to Correspondents.

T. W. (Paisley).—*Honey from Cappings.*—Immediately after removal from the comb put the cappings either into a muslin bag or stretch the material over a receptacle into which the honey can drain. When as much as possible has drained off, apply pressure by putting the cappings, still in the muslin, between boards with a heavy weight on the top. The small quantity of honey remaining will then leave the cappings.

Honey Samples

H. S. (Wales.)—We do not consider your sample equal to Scotch heather honey. It is rather thin, and lacks the pronounced flavour of the latter. There is also a suspicion of fermentation about it.

A. D. (Cheshire).—No. 1 is from clover, and a nice light honey. No. 2, a medium honey from mixed sources, but rather spoilt by ragwort.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

WANTED, four dozen healthy Drawn out Shallow Frames; state price.—E. BOOBIER, No. 4, Jones-terrace, Old Babett, Swansea.

14 DOZEN screw cap jars Pure English Clover Honey, 9s. dozen, carriage paid; 28lb. tin, 16s.—MALCHER, Hartwell, Northants. v 100

HEATHER blend Honey, very fine flavour, 28lb. tins; sample, 4d.—F. A. BEAN, Snaith, Yorkshire. v 2

CHAPMAN Honey Plants, strong, transplanted, dozen, 2s. 6d.; six, 1s. 6d.; Wallflower, blood red, 100 2s. 6d., 50 1s. 6d., free.—FREDERICK BIGGE, Tyburn, Birmingham. v 7

Editorial, Notices, &c.

THE BEE DISEASES BILL.

As the smooth working of a Bee Diseases Act will very much depend upon the friendly co-operation of bee-keepers with the Board of Agriculture and Fisheries, it is desirable that the misunderstanding with regard to the working of the Act, which has caused opposition from some bee-keepers, should be removed. As will have been seen from the correspondence in our columns, the opposition to the Bill is based on entirely wrong grounds. It is well, therefore, to state exactly the provisions of the Bill; what could and what could not be done under it.

The Bill imposes the duties with regard to bee diseases upon the Board of Agriculture, and gives the Board full powers for legislating by means of orders with the object of preventing the spreading of disease, just in the same manner as is done with regard to diseases of animals, and destructive insects and pests.

The proposed Bill, it will be seen, is permissive and enables the Board to make orders which would have to be carried out by the local authorities of those districts to which the orders apply. It does not make it compulsory, but leaves it to the Board to make the order applicable to any district or area if deemed expedient. Orders may be made preventing the introduction of bees or any *thing* whereby a pest or disease may be introduced. Thing, is a very comprehensive term, and includes honey and wax "from foreign or colonial sources," the importation of which, a correspondent recently assumed, would not be barred. The order may even authorise the seizure, detention or the destruction of things introduced in contravention of such order.

The Board may further make such orders as they think expedient for preventing the spread of disease, and may authorise the destruction of any colony of bees so affected, and any receptacle (other than a movable-comb hive) subject to payment by way of compensation of the value of the thing destroyed. It will therefore be seen that the Bill does not prohibit the use of skeps and box-hives, but allows of their destruction subject to payment of their value. Movable-comb hives are excluded from destruction, as they can be properly disinfected. Although the order may authorise destruction, it does not necessarily follow that every colony showing signs of disease shall be destroyed. On the contrary, as in cases of insect pests, the order may prescribe certain remedies and their manner of application, and only order the destruction in extreme cases, or when this is the only means of arresting the spread of disease. In the case of some diseases there are well-known remedies, and in those for which no remedies are at present known it is reasonable to suppose that in time methods of prevention and curing will be found. The Board, of course, would have power to vary the order from time to time, or withdraw it altogether.

The order may impose fines for offences against the order not exceeding *ten pounds*. This does not mean that the fine shall be ten pounds, but, as in all such cases it is left to the judge or magistrate to assess the fine in proportion to the gravity of the offence, a first offence would probably be punished by a trifling fine, and subsequent or more aggravated offences would naturally incur heavier penalties.

An order of the Board may direct the local authority to enforce the order within its district, and if it fails to do so the Board of Agriculture would have all the powers of executing and enforcing the order. This is very important, because it will safeguard the interests of bee-keepers in the districts where the local authorities take no interest in bee-keeping.

The greatest misapprehension appears to be felt with respect to the inspectors and their powers. There seems to be an idea that the Bill would give them power not only to visit any premises and mess about with the hives of bee-keepers who have no disease in their apiaries, but also to proclaim infected areas and stop all trade of their own will. How such an idea is conceivable is difficult to understand, as it is quite at variance with the usual orders of the Board, an essential part of whose procedure is to require the notification of disease, so that no premises free from disease would be likely to be visited or hives interfered with unless disease is rampant in the locality, when it is but reasonable that all apiaries should be visited to ascertain the extent of the epidemic. Otherwise it is only when properly notified that an inspector could visit the premises, and even then he would have no power to interfere with the bees unless he was a qualified expert. The order of the Board would specify the qualification of the Inspectors and experts, and it by no means follows that all experts having certificates would be considered qualified. The Board would have to be satisfied that they not only know all about diseases, but also thoroughly understand antiseptic principles so as not to carry diseases from one apiary to another. Inspectors do not have power to proclaim infected areas, or interfere with trade in any way, their business being to report to the local authority or the Board of Agriculture, and, if necessary, accompanied by an expert adviser, to put in force the pro-

visions of the order, the owner and occupier giving all reasonable facilities. Should any person obstruct the inspector or other officer in the execution of his duty, he would be guilty of an offence against the Act, and would be liable on conviction to a fine not exceeding *ten pounds*.

It will therefore be seen that inspectors have not the powers, which some seem to attribute to them, and that the working of the Act would rest with the Board of Agriculture, who are in close touch with the B.B.K.A. and bee-keepers generally, know their requirements, and will certainly not make orders that would harass or injure them. An Act such as this is infinitely better than one defining just what should be done, in which case it could not be varied, whereas the Board of Agriculture may withdraw or vary an order from time to time with regard to notification, and the administration of the Act as experience may suggest to be desirable. We hope these remarks will clear up some of the misconceptions with respect to the Bill, and satisfy bee-keepers that there is not going to be any unreasonable interference with their bees. Also that bee-keepers generally will co-operate with the Board to make the Act work smoothly, and thus forward the interest of the industry.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, November 21st, 1912. Mr. W. F. Reid presided for a portion of the meeting, and upon his leaving, Mr. A. G. Pugh was voted to the chair. There were also present:—Miss M. L. Gayton, Messrs. J. Smallwood, E. Walker, O. R. Frankenstein, J. B. Lamb, and A. Richards. Association Delegates:—G. J. Flashman (Barnet), J. Price (Cumberland), G. R. Alder (Essex), G. W. Judge (Crayford), W. G. Fischer Webb (Croydon), J. Tinsley (Staffs), and the Secretary, W. Herrod.

The minutes of the previous meeting held on October 10th were read and confirmed.

Letters expressing regret at inability to attend were read from Messrs. G. W. Avery, E. Watson, C. L. M. Eales, and Capt. Sitwell.

The following new members were elected:—Miss C. Dunn Gardner, Mr. A. J. Rayment, Mr. J. J. Harveyson, Mr. W. W. Ridler, Mr. W. Garwell, Mr. J. Bancroft, Mr. W. G. Goddard, Mr. H. E. King, and Mr. H. Tinley.

The Spey Valley Association submitted the names of Mr. D. M. Macdonald and Dr. Sellar as delegates, and the same were accepted.

The report of the Finance Committee was presented by Mr. Smallwood. The payments into the bank for October amounted to £35 0s. 6d. The balance at the bank at the end of September was £165 1s. 4d. Payments amounting to £24 17s. 6d. were recommended.

Messrs. J. Cornall, W. O. Jones, and D. Davies lectured before the Council for the first-class certificate, and all succeeded in passing the test.

The proof of conditions and application for insurance for 1913 was submitted and passed.

The report of the Exhibition Committee was presented, and the schedule for "Royal" Show at Bristol was passed, with the inclusion of classes for members of Somersetshire Association only. The judges appointed were:—Mr. T. W. Cowan, Mr. C. L. M. Eales, Mr. W. F. Reid, and Rev. H. G. Stanley, with Mr. A. G. Pugh and Mr. L. E. Snelgrove as reserves. Steward—Mr. L. Bigg-Wither.

Next meeting of Council, December 19th, at 23, Bedford Street, Strand.

AMONG THE BEES.

By D. M. Macdonald, Banff.

VIRGIL'S BEE FLOWERS.

Anything connected with flowers always makes interesting reading. A flower is not a flower alone, a thousand thoughts invest it. To bee-keepers, flowers specially suited for the bees' needs have an added halo round them, and more particularly is this the case when they are vested with the accumulated glory and virtue handed down to us by the bee writers of well-nigh two thousand years. The silver-tongued Virgil sang their praises before the beginning of the Christian era, and dwelling in fair Parthenope, in the midst of country scenes and delights, he had ample means of studying and enjoying Fair Flora's favours. He taught us how to multiply and increase flowers and bushes, shrubs and trees; in what soil to grow them, and the best uses to which they could be put. Chiefly and above all the rest he points out lovingly the connection between flowers and bees. Even the lower types he tells us have their uses. The very willows and lowly broom supply material for honey. The poor gravel of a sloping hillside furnishes humble cassia and rosemary for bees. Near their hives he advises the planting of green cassia and fragrant wild thyme, and a supply of strong scented savory in abundance, and let beds of violets drink of willing fountains. Let a palm or stately wild olive overshade the entrance. Here, to-day, we would say let fruit trees grow in the apiary, to shade our hives under their overarching boughs. When the new chief leads them forth as a swarm, the tree or bush facing them may receive them under its leafy

shelter, he tells us, having an eye to utility. In early spring, when the golden sun has overcome the winter and driven it under ground, bees roam through the lawns and woods, and reap the harvest of bright-hued flowers, and lightly sip the surface of the streams. Hence rendered joyous by some sweet influence or other derived from the flowers, they cherish, their offspring and their home; hence they form with cunning art the fresh-gathered wax (pollen and propolis) and shape the clammy honey. When a swarm rises, looking for leafy coverts, sprinkle the juices prescribed, bruised balm and the common herb of honey-wort, ring bells and beat cymbals all around. Let your gardens be fragrant with saffron flowers. Be careful to have thyme and plant pines all round, and plant fruit-bearing shoots in the ground. I might sing further what methods of culture would adorn rich gardens and the rose beds, and how endive and banks green with parsley, nor shall I pass in silence the late flowering daffodil, nor the stalks of the drooping acanthus, or the pale ivy, and the myrtles, that love the shore. The young bees return fatigued late at night, their thighs laden with thyme honey, and the honey in the cells smells rich of thyme. They feed at large on arbutes and grey willows, on cassia and golden-hued crocus, on the gummy lime and deep-coloured hyacinths. They themselves gather their progeny in their mouths from leaves and fragrant herbs (a reference to the "animable" matter believed in by bee-keepers less than two hundred years ago). They wear themselves out, so powerful in them is the love of flowers, and so strong is their ambition to collect honey.

In cases of sickness, fumigate their hives with thyme. Burn odoriferous galbanum, mix pounded gall-nuts and dried roses, or raisins from the vine, crecopian thyme, and strong-smelling centuary. Also, in the meadows there is a flower amellus. Its taste is bitter in the mouth. Boil the roots of it in high-flavoured wine and place in baskets at the door as food. The beautiful legend of narcissus is introduced, and nectar new-gathered and consigned to the cells is named "Narcissus tears."

Finally we have that delightful home scene, wherein the old Coryeian is pictured with his bee garden, which forms so fair a picture that it will bear transcription as a whole. He tilled a few acres of unclaimed land: and that soil was not rich enough for the plough, nor suitable for flocks, nor adapted to vines. Yet here among the brambly brakes, planting a few pot-herbs, and white lilies round them, vervain, and small-grained poppies, he equalled in his contentment of mind the wealth of kings; and returning late at night he loaded his board with unbought dainties. He was the first to gather the rose in spring, and apples in autumn, and even in winter he gathered the soft acanthus, taunting the summer for its lateness.

He therefore was the first to have queen mothers and their numerous progeny, and to squeeze and strain the frothing honey from the pressed combs. He had hives and pines in great abundance and luxuriance; and as many apples as the fertile trees had been clothed with in early blossom, so many it retained to ripeness in autumn. He, too, transplanted and arranged in order the elms, even though late, and hard pear trees and blackthorns now bearing grafted plums, and the plane tree already affording shade to drinkers.

Honey in Virgil's time was not looked on as being derived from the nectar of flowers alone, but was considered to consist largely of what Pliny called the "Spittle of the Stars." Flowers, however, not only yielded the bees nectar, but also the animable matter previously referred to, *i.e.*, it was believed that from them they gathered a substance which when carried into the hive became young bees.

The foregoing descriptions of flowers are literal translations of Virgil's own words, all being simply grouped loosely together.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

DISEASES OF BEES BILL.

[8601] The letter from Mr. C. B. Bartlett on the above in the "B.B.J." of November 28th (page 475) is so full of misstatements that I am almost surprised you are patient enough to give it space and detailed reply, which it hardly deserves. But as secretary of an Association which has over 100 members desiring to see the Bill passed and put into practice at the earliest moment, may I directly deny one or two of his statements, which you, in your gentle dealing, refrain from doing. After stating that he has been a reader of the "B.B.J." since its first volume he states "Against it (the Bill) you have, *so far as I can learn*, all the considerable bee-keepers and a vast number of smaller ones!" How can these two statements be reconciled? The "B.B.J." for the past two or three years has been full of letters

from the most famous bee-keepers of the country as well as from smaller men, all anxious for legislation, and latterly for the passing of the present Bill, with a very rare case of opposition from time to time. In fact, almost every issue bears evidence of the overwhelming majority in favour, and the few letters of opposition each produced a host of replies.

Mr. Bartlett's condemnation of the experts must be a result of prejudice, as if he really has travelled about among bee-keepers at all, he must in justice admit the good work accomplished by them, imperfect though they may be. To suggest that the average expert has not had the practical experience of managing numbers of stocks successfully, proves Mr. Bartlett's lack of real knowledge of the examinations for experts; mere book learning would not carry one through five minutes of the examination.

His final argument, before asking for names of those opposed to the Bill, is that modern students have proved those of an earlier generation to have been wrong in some of their deductions as to the causes of bee diseases and their treatment, and therefore we would be wise to unite in opposing the Bill! Could a more feeble argument be thought of? How many among the learned animal doctors, whether qualified veterinary surgeons or not, are agreed as to the causes and best treatment of foot-and-mouth disease or anthrax? Do they oppose the present wise legislation for preventing the spreading of those diseases because they disagree as to causes or cures?

Mr. Bartlett suggests that Inspectors might forbid the use of skeps, again proving his lack of knowledge of his subject. It is the very thing which was urged by that prominent and able writer on bees, Mr. Tickner Edwardes, but was not included in the Bill owing to the strong opposition to the proposal from many quarters.

Mr. Bartlett writes he has much experience in dealing with bee-keepers who have diseased bees, and "with a little tact it is generally quite possible to manage such matters." His confidence is sublime! I should like to introduce him to one or two "blank stone-wallers" on the subject, and watch the result of his "little tact." There wouldn't be any gambling in betting on the result!

Space forbids more, but one instance will suffice. One hive with "Isle of Wight" disease was imported into one of our districts. After examination our expert desired to destroy the lot, but the owner preferred to experiment with cures. The result was, neighbouring bees were affected, the stock itself had to be destroyed eventually, and now the disease has gained a hold there. Where and when it will stop no man can tell. If each of those who oppose the Bill could experience something like this there would soon be little opposition left.—CAMPBELL R. PINKNEY, Yorks.

STILL MORE SELF-HELP NEEDED.

[8602] I suggest that Mr. Chas. H. Heap (page 458), having picked to pieces one of our ablest and oldest apiarists, will now let the craft know what he and the trained scientists, in whom he puts such faith, have to offer, in advance of what is offered by Mr. Simmins. I am not seeking to belittle the work of the said scientists, but they discover, or think they discover, the precise germ-cause of the disease and there they leave us. So far as I am aware, they have not sought to discover the real origin of the germ, or from how many sources the bee may become a host, other than by infection by its own kind. These remarks apply equally to foul brood, and to infectious paralysis. Scientists in Britain, America, and on the Continent are all more or less at loggerheads regarding foul brood, and I believe I am right in saying there is not a bee-keeper of any extent, or length of experience with this disease, who expects it will ever be stamped out so long as a colony of bees is left, or who doubts for one moment that it would break out again so soon as more bees were imported whereby it could get a fresh start.

I hold no brief for Mr. Simmins, but having made somewhat exhaustive experiments with "suitable germicides," recommended by him, I would place what he offers the craft, alongside what the Board of Agriculture has to offer. Mr. Simmins offers prevention and resuscitation. The Board of Agriculture, cremation.

Why should British bee-keepers be required to unhinge their tongues in the attempt to get round "microsporidiosis." Further, "Isle of Wight" disease is a misnomer, which the luckless wights of that fair isle ought to resent. Infectious paralysis is, I submit, fair and capable of being "understanded by the people."—F. WOOLDRIDGE, Winchcombe.

[If our correspondent will study the report published by the Board of Agriculture, he will find that the points he raises with regard to the sources of infection have not been overlooked, but have been treated in a most exhaustive manner in Sections VII. and VIII., occupying in all 22 pages. Section VIII. deals entirely with field observations on natural methods of infection. Although scientists may never discover the real origin of germs, they know that bacteria exist and that they are the cause of certain symptoms.

When they find that specific germs, after isolation are capable of producing definite symptoms and no others, it is reasonable to conclude that they have discovered the cause of the disease. It is not right to say that "scientists in Britain, America and the Continent" are at loggerheads about foul brood. They are pretty well agreed, but there are variations in the symptoms in different countries, probably owing to climatic conditions, which to the uninitiated make them appear to disagree. That disease cannot be stamped out we do not believe, as we have evidence to the contrary. What about cholera, plague, small-pox, and more recently rabies? We remember the outcry when the restrictions of the Board of Agriculture with regard to this disease were enforced. We were then told that rabies would never be exterminated so long as there was one dog left in the country. The result has proved the contrary, and has vindicated the action of the Board of Agriculture. We believe bee diseases can also be exterminated in this country, if proper measures are taken, but not while a large number of bee-keepers are allowed to propagate them to the detriment of the industry.—ED.]

BLURTS FROM A SCRATCHY PEN.

[8603] *Old Bee Journals.*—The BRITISH BEE JOURNAL, Volume I., 1873-4. "Conducted by Charles Nash Abbott" is on the title-page; on the next leaf the owner of the volume has written his name, "John Weston, Honey Cott, Leamington." Thus opens out the relic I have in front of me. Only thirty-eight years ago! Think what vast strides we have made since that time. Who so keen, so unselfish, so honest in the craft as were these two veterans of the Old Guard, long since gone to their honoured rest.

But friend Charles, I love not thy opening. "Bee master," "conducted by." Was the former title well chosen? We lead our bees, we guide them, but do we even yet bend them from their own sweet will? Do we "master" them? And why "conductor"? Is it that you were timid of your bantling, or were you too modest to assume the ambitious title of "Editor"?

The opening article of the newly-born. We look to it for indications of future policy. We should have preferred a bolder note than "In offering our services" or "we do not seek to rival or disparage any other work or journal in which bee-keeping is considered." But the excuse is that you were not gifted with the spirit of prophecy. You could not foresee the future. We can look back now and admire thy bravery in planting the seed of which we reap the fruit.

One reads an author by his writings, and we gauge the state of thought in those days by the measuring rod of this letter. It would seem almost as if an apology was deemed necessary for thrusting the new journal on the world, as other quotations I am giving, illustrate. For instance, "we do not anticipate much sympathy or support from the general public, nor can we hope to induce the bee-keeping cottager (so-called) to abandon at once the superstitious and obscure theories by which that class of bee-keepers have been 'governed,'" and again, "our mission is to aid those enlightened members who cultivate bee-keeping." Why speak thus himself? I accept the writer's very words. To keep bees, to read, to study the literature about them, in order that one may be better able to manage, must of itself show enlightenment, and if enlightenment, therefore, advanced, superior. Wherefore I am disappointed that the keynote of the commencement was not pitched higher. It would have been more dignified to have recognised that it was an honour to be the accredited intermediary of the correspondence to voice the opinions, the thoughts of the advanced bee-keepers of that day, pioneers of a science inferior to none other in interest. And that these were behind him can safely be assumed, for it is further said, "the circulation has been procured almost entirely through the zeal of individual bee-keepers," and one more quotation almost historical, "we cannot close without commending the proposed Bee Guild (title first suggested for the British Bee-keepers' Association) to the serious attention of bee-keepers. *Its purpose is the advancement and improvement of the whole science of apiculture* by the establishment of local clubs and conventions, subject to a central authority."

We finish with the introduction, and pass on to the correspondence, halting to notice that even then there were early swarms to chronicle. "A fine swarm of hybrid Italians on April 26 issued from a Woodbury hive belonging to Mr. Hughes, of Windsor Road, Ealing." Although there is matter for an interesting article in either of the two first letters, yet the space I am allowed will not permit. The first is about the "honey-extractor," slinger, mel-extractor, or melipul. We had forgotten those names. And next is concerning artificial pollen.

An article on the Stewarton hive and system follows, well written and readable. I pounced on it at once, for I am rather anxious to secure information about these early struggles toward the modern system, but I was disappointed, for there was but little of practical value in it. The writer records his wanderings in search of his ideal hive through the streets of Glasgow, where a super attracts his attention, but

let me quote his own words, "and on stepping into the shop (where honey from a Stewarton was on sale) and feasting my eyes on the display. I priced a particularly fine box, and was told it was a first prize one and *cheap at three guineas*." Alas! sad is the day! We cannot get these prices now. He extends his trip into Ayrshire, and I presume, for he does not say so, that there he found his object, for he proceeds to expatiate on its glories. But I must hasten on.

An article on fertile workers is the next by a Lanarkshire bee-keeper. I fancy a modern writer from Britain, North of Tweed, whom I am happy to call a friend, would have trounced this fellow-countryman soundly for gross heresy.

The number finishes, as have all journals since the beginning, with "Queries and Replies," and the first reads thus:—"Are those wooden, straw, or glass hives of any practical use to ordinary bee culturists"? I presume the Editor (conductor I should have said) knew what was meant. I am afraid I do not. The question errs from lack of exactness. However, an answer is given almost equally delphic, but a remark anent the straw-skep is worth repetition.

"The straw-skep, with its contents, was, as it were, a sealed book, or perhaps we ought to say, like a page of hieroglyphics, full of awful mysteries, which many had to decipher without the true key." In query No. 2 occurs the following:—"The original stock seems well, but in one hive, which lately seemed thriving, the bees are dying by hundreds. What is the cause of this"? Have I read similar enquiries recently in the journal of the present time? It seems very familiar in the wording, and not unlike a description of *Microsporidiosis*, but neither the scientific nor every-day name of the "Isle of Wight" disease had been invented then. —J. Smallwood, Hendon.

ASLEEP AT LAST.

[8604] Scarcely a bee in the other hives was awake in November, and the ivy, unusually late in blossoming, wasted its sweetness on the desert air. My October-driven lot sent out on fine days something like two bees for every one from a combined force of twenty hives up and down the village. I know it by watching the other hives and the sunniest clumps of ivy as well as the humming industry of the newcomers. On November 9th they were coming home at the rate of fifty a minute and on the 15th they were evidently doing quite as much, though I did not count them. You could see four at once, with fully-laden pollen-baskets, passing through the glass portico left up since robber-time. On the 25th they were still quite busy, but the night of the 27th was a very hard frost and the 29th a piercing blizzard. These fierce workers are asleep at last and will, I suppose, do no more honey-gathering till the aconite comes.—G. G. Desmond. Sheepscombe, Glos.

THE BEE DISEASES BILL.

[8605] Like Mr. C. B. Bartlett (page 475), I, too, am not a regular contributor to your valued Journal, so hope you will be able to spare a little space to place my views by the side of his. Of course, I cannot claim to possess anything approaching the 1000 stocks your correspondent mentions, which perhaps accounts for my being federated (as this is what we members of Associations claim to be) and so able to help the small bee-keeper if not a member, by lectures, &c. Mr. Bartlett is anxious that no one should make a too bold statement as to figures, so I will speak of my own. When the *Smallholder* asked for signatures for and against legislation, the result of my canvass in about a four-mile radius was ninety-nine per cent. for legislation. As in the course of obtaining the signatures I only met one man who refused to sign, and as his stocks for four years have only been stray swarms, which have taken possession of the disease-reeking combs, only to follow their predecessors' sad fate, I think I might claim the 100, don't you? If Mr. Bartlett will write to the Editor of the *Smallholder* he can get the only reliable figures of a memorial quite up to date. To say that "the warmest supporters of legislation are would-be inspectors," and that the "experts would be more profitably employed by keeping bees" is ridiculous and narrow-minded in the extreme; altogether utterly unworthy of one of such broad experience. If your correspondent knew anything about the matter at all, he would know it is quite impossible to obtain the third-class certificate unless he can practically handle bees. I do know that, as I was honoured by receiving one. Also, I have failed to get a second-class. How should inspectors be appointed if not by examination? Certainly not by favouritism, as the certificate will be necessary as proof of knowledge. And how can these be more fairly awarded than by a central parent society, which instituted the Standard frame, and many other conveniences for the good of bee-keepers? In conclusion, I should advise your correspondent to join his county Association and do some work for the good of the cause, and help those that need it, and not be so suspicious of those who have the management and good of these Associations at heart.—A Small Bee-keeper, Guildford.

MR. SIMMINS AND CYPRIAN BEES.

[8606] On page 444, Mr. S. Simmins has something to say about Cyprian bees, which I contend is inaccurate. I am sorry it is necessary to write this, but younger writers are very liable to take it for granted that what he says is correct, and repeat it in their writings.

In the first place, Mr. Frank Benton did not come back with Mr. D. A. Jones from Cyprus, see "B.B.J." for June, 1880, pages 25 and 32, also July, 1880, page 45. Mr. Benton was to stay in the East and send queens to Mr. Abbott, and he did not return to America before 1890.

Now, Mr. Simmins could not have got any of the queens which Mr. D. A. Jones brought with him, as, after flying and repacking, he took nearly all with him to Canada. For some reason, Mr. Benton failed to rear queens and Mr. Abbott was very sore about not getting them, see "B. B. J." for August, 1880, pages 63 and 64. I called on him in September, 1880, to learn what I could about these bees and why he did not supply them, as I wanted some, and he showed me a press copy of a letter he had sent to Mr. Jones, which was far from complimentary.

I can't say exactly when Mr. Benton went back to America, as there was no "drum beating" over the event, anyway he was in Laibach in 1889.

I do not think Mr. Simmins could have had Cyprians before 1884 or 1886, for, if he did have them and found them proof against disease in any degree, why did he not mention it in his paper on "Foul Brood," read before the B.B.K.A., on January 16th, 1884? (see "B. B. J." for Feb. 1st, 1884, page 41), or why was it not mentioned in the discussion which followed? (see "B. B. J." for Feb. 15th, 1884, page 59.)

Cyprians have been very carefully tested and have proved the worst bees ever imported; none are so susceptible to foul brood and winter dysentery as they are. The only redeeming feature about them is their beauty and gentleness—if you know how to handle them—but they are demons if handled like ordinary bees.

I see he mentions the Texas story (by Carroll) about getting 1,000 lbs. of honey with these bees, but if I could have suitable weather, in this country, just to my liking, I would harvest double this quantity from a good strain of black bees. The only difficulty in the matter is the weather. I have only one remark to make about this story. Why did not Carroll get 1,000 lbs. of honey from every hive, every year? My idea is that the weather in Texas is no more reliable than it is here. Mr. Simmins should be more accurate in what he says.—J. Rose.

"W. B. C." MEMORIAL FUND.

[8607] I should like to heartily thank those friends who have now responded, since it was suggested that we should each send a supplemental subscription of but a penny a hive, according to the number of stocks possessed. Many of our present-day members have not, of course, known our dear old colleague of past days, but there must be *hundreds* who bear him in cherished memory. For the sake of Auld Lang Syne, let each one who did know and love him, send their penny a hive *at once*. This final word, "lest we forget."—E. D. Till.

[8608] I noticed in "B.B.J." of of 21st inst., the small amount contributed to the "W. B. Carr Memorial Fund." I hasten to send you my mite towards this fund. I consider it my duty to acknowledge my gratitude for the many benefits derived from the reading of the many practical articles penned by that gentleman.

A testimonial to "W. G.," the great man of the cricketing world, resulted in the raising of many pounds. Why should not this Memorial Fund to "W. B. C." a great and practical man of the bee-keeping world, result in the raising of at least many many shillings? All bee-keepers cannot but acknowledge the great benefits they have derived from the inventions and the perusal of the writings of W. Broughton Carr, and they should, at once count their blessings and pay up the debt they owe, and so help to perpetuate the memory of their benefactor.—Charles A. Ingham.

W. BROUGHTON CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged...	8	11	3
W. Wilson	0	2	6
F. L. (a small tribute to a great benefactor)	0	2	6
J. R. Craik	0	2	6
D. M. Macdonald	0	2	6
C. A. Ingham	0	2	6
A. Earle	0	2	6
J. Price	0	2	0
A. M.	0	1	0
We are Seven	0	0	7
	£9	9	10

SUBDUING BEES.

By Somerset.

(*Continued from p.* 479.)

The majority of bee-keepers know how smoke is administered for the purpose of subduing their bees, but very many fail to bring about the desired result completely, because they omit the most important detail of all, viz.:—that of waiting for a short interval after applying the smoke before opening the hive, in order that the bees may have sufficient time to feed themselves.

Many people open a hive first of all, alarming the guards as they do so, and after giving a few puffs of smoke under the quilt, at once proceed to remove the frames. The result is that not only does the smoke not reach the bees in the lower parts of the hive, but none have sufficient time to feed, and they are consequently disturbed, restless, and vicious.

The most effective procedure is to approach the hive slowly and quietly, drive in the guards with a puff of smoke, and then inject into the entrance six or more powerful puffs, making sure that the smoke will permeate the whole hive. Being warm it rises at once and all the bees come under its influence before any noise or disturbance has been made. An interval of *one minute at least* should then elapse before opening the hive. A few gentle puffs should be administered as the quilt is slowly lifted, and the bees will then be found good-tempered and inclined to adhere to their respective combs instead of running excitedly from comb to comb.

To keep the bees down during manipulations, occasional puffs of smoke should be blown over the tops of the frames in a *horizontal* direction, so that it may fall gently on the bees. It is both unnecessary and cruel to drive smoke vertically into the hive, and it leads to the particular state of excitement and stampede which the operator wishes to avoid, especially if he happens to be looking for the queen.

The chief drawback in the use of the smoker, is that it frequently "goes out" in the midst of a job, either through the bee-keeper having neglected to place it in an upright position when not in use, or because he has omitted to provide himself with suitable or sufficient fuel.

Amongst the materials commonly used in the smoker are:—

1. Brown paper. The rougher kinds make good fuel when formed into rolls of suitable size, but the glazed kinds should be avoided, as they will not keep alight.

2. Rags of various kinds. Some of these smoulder for a long time, *e.g.*, corduroy, but many give off offensive fumes. They are comparatively difficult to kindle and if packed too tightly they prevent the necessary draught through the smoker.

3. Decayed and dried wood. This is obtained from old tree stumps and is much prized by country bee-keepers. It is readily kindled, burns to a small white ash, and gives off a pleasant smelling smoke. On the other hand it burns away rather quickly.

4. Corrugated packing paper. This is, perhaps, the most convenient and serviceable fuel used. It is often obtainable for nothing, as tradesmen are sometimes glad to give it away. The wise bee-keeper will collect as much as possible during the winter and make it up into suitable rolls or "cartridges." None of his winter work will be more profitable than this. How often do we come across the man who is in a tremendous hurry to use his smoker and cannot put his hand on a bit of fuel for it!

The "cartridges" should be made in two sizes, as it is wasteful to put much fuel in the smoker for short jobs. For these, oblong pieces of the paper should be cut 2ft. by 2½in., the shorter side being parallel to the corrugations. These should be rolled up tightly with the corrugations inside, and a piece of thin paper passed round each and pasted like a newspaper wrapper. One of these rolls will last a quarter of an hour. For ordinary work in which the smoker is required to last for half an hour or more without being re-charged the pieces should be cut 2ft. 6in. by 5in.

It is undesirable to make "cartridges" which will last much longer than half an hour, because the smoker becomes excessively hot, but if particularly desired a "cartridge" may be made to last a very long time by rolling a piece of thin sacking with the corrugated paper.

Such "cartridges" not being often required, may conveniently be distinguished by coloured wrappers.

The preparation of fuel in this way forms a useful and interesting occupation for children during winter evenings, and it is surprising how quickly, neatly and accurately they will work, especially if they are accustomed to some form of manual training in school.

Bee-keepers frequently find it difficult to ignite their fuel readily and properly, especially if they are hurried. Sometimes it is slightly damp and will not burn at all, and at others it burns on one side only. The following is a capital plan for obviating these tiresome hindrances:—Dissolve ½lb. of potassium nitrate (costing 3d.) in 1½ pints of hot water. Dip one or both ends of each "cartridge" in the solution to the depth of ¼in.

When all have been dipped, dry them near a fire or in an oven.

A "cartridge" so prepared will ignite immediately and thoroughly, whenever a

match is applied to it, even if it is slightly damp.

We occasionally see fuel placed in the smoker upside down. The ignited end should, of course, be inserted first.

For prolonged work in the apiary, it is desirable to have a carbolic cloth at hand. It becomes very serviceable in case it is found necessary to recharge the smoker whilst a hive is open.

In case of manipulation becoming necessary when neither smoker nor carbolic cloth are available, the pipe or cigarette may serve the purpose, but these are not suitable for prolonged work. A roll of brown or corrugated paper, prepared and ignited as for the smoker, should be held in the hand and the smoke blown into the hive by means of the breath. Except for the fact that the roll will occasionally burst into flame, this is quite a satisfactory method of control.

The writer has successfully used it in the difficult task of getting bees from a hollow tree.

The bee-keeper who carefully bears in mind the principles underlying the methods of pacifying his bees and prepares a sufficient quantity of suitable fuel during the winter, will not only be always ready for emergency, but can look with equanimity upon any difficult or prolonged work that he may have to do during the summer.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A Great Haul (p. 416).—Wasps rear a large number of queens at the end of the season, and such prolificacy is essential to the preservation of the race. It is perhaps possible that Mr. Fowler included the drones in his estimate of the numbers. When comparing the queen wasp with the queen bee, one cannot but be struck by the amazing energy, independence, and vitality of the former.

Bold Measures (p. 416).—"D.V." must have had confidence that he was doing the right thing when he fitted-up all his hives with chaff bags, but his confidence appears to have been justified. My own bees are too serious to stand chaff, they gnaw the cushions and let the chaff out of the bag. But the cushions were made of thinner stuff. It is interesting to note the use by "D.V." of the term "boll." I thought this was an obsolete measure, but it appears to be still in use. It contains, I believe, six bushels, or is it four of flour? Perhaps "D.V." will put me right.

Calico for Roof (p. 426).—Some time ago I strongly advocated the method. At that time I glued the calico down and painted over it. I am bound to say that experience proves that it is not the best plan. It has some advantages, but if not painted with some regularity, it will loosen from the roof, should the paint perish sufficiently to admit rain. This does not matter much if there are no steps in the roof. But with such roofs as those illustrated (page 425), or my own, which have a flat top board, the calico will then shrink and pull out from the corner of the step. With glue it is possible to give it a smoother and more perfectly fitting appearance, the paint leaving a rather rougher and stucco-like surface, but the paint makes a sounder job, and is, I think, to be generally preferred, hence this admission.

Withheld Prizes (p. 428).—One cannot but sympathise with exhibitors whose entries have been insufficiently supported by their fellows, and whose chance of a prize is consequently reduced by withdrawal on account of a paucity of entries. For such withdrawal is at best a clumsy method of meeting the conditions, and must operate unequally. There is much to be said for the system where entries are of low standard, but when a few high-class entries suffer because someone else has not thought fit to expose inferior exhibits, it is productive of "hard lines." On the other hand, committees are well within their reasonable rights in thus safeguarding their own financial interests in this way, by laying down a hard-and-fast rule for the judges, and it might reasonably be argued that an increase of entries would correspondingly reduce a competitor's chance of an inferior prize.

Spacing and Drones (page 429).—It appears to be commonly supposed that a narrow spacing of frames, say 1¼-inch centres, will prevent either the building of drone-comb or the rearing of drones. I feel sure that the wish is father to the thought, and that the scheme is a fallacy which the bees quickly dispose of.

A Hanging Feeder (p. 432).—It seems to me that the hollow wall of a hive is a suitable place for a feeder, but such a feeder ought to be removable at will, and replenishable without opening the hive proper. There should be no difficulty in this, the back panel being a door and the bees having access through the inner wall. The feeder could have an observatory panel and be filled by a suitably shaped funnel. The objection to an inaccessible feeder is that bits of foreign matter and dead bees may accumulate. I intend this winter to fit up some hives in this fashion.

Queries and Replies.

[8569] *Feeding Bees in December.*—Will you please reply to the following in the next "B.B.J." Having found that my bees had no food in the combs, I put on warm syrup, in a rapid feeder, made from recipe No. 6 in Guide Book, but the bees do not take it down.

Can you tell me the reason? The naphthal beta, with which it is medicated, makes it smell a little strong. Will it answer to use candy only, all through the winter? I have been told that there is not enough moisture in candy to keep the bees alive. They are flying well on warm days. I tried pouring the syrup on an empty comb, and putting it on the alighting board, but though the bees carry it in, it causes robbing. Please say what is best to be done.—W. H. C., Worcester.

Reply.—Take out about three combs, and fill them with warm thick syrup by pouring it over the combs from a height of about 1ft. Put these in the hive as near the cluster as possible; also give the bees a good four-pound cake of candy. It is much too cold for bees to take syrup from a feeder.

Notices to Correspondents.

Musical Bee (Hants.).—*Bees Building Comb in Candy-box.*—(1) Take off the box in which the bees have built comb, and (2) replace it with another cake of candy; they evidently require the food.

Beginner (Worcester).—*Dwindling Stock Robbed Out.*—From your description we should say the bees died from "Isle of Wight" disease, and the hive was robbed out by the other stock. You should destroy combs, &c., and also the hive in which the diseased stock was; as it is not standard size, it is not worth much. We fear you will not need to treat the remaining stock, as no doubt the robber bees will have carried home the infection.

A. H. S. (Middx.).—*Material for Hives.*—The best wood to use is yellow pine, on account of its freedom from knots.

G. C. (Sheffield).—*Finding the Queen.*—Rear a piece of excluder zinc at the front entrance to the hive, and put into position a sloping board as for hiving a swarm. Then take the combs out one by one, and shake the bees off each on to the board; the workers, being able to pass through the excluder, will enter the hive, leaving the queen outside, when she can easily be secured.

W. H. C.—*Black Boot Polish.*—Try adding more oil until you get it to the consistency you require. Take care to dissolve the ingredients over a slow fire, and after stirring, pour out into moulds when cool, but do not wait until it is cold.

H. K. (San Remo, Italy).—*Best Books on Anatomy of the Bee.*—As you already have Cowan's "Honey Bee and Guide Book," you might find Cheshire's "Bees and Bee-keeping," Vol. I (Scientific), useful, as it treats entirely of the anatomy and physiology of the bee. There is no book in French or Italian devoted entirely to this subject. "Manuel d'Apiculture," by M. Girard, published by Bailliere et Fils, Paris, and "L'Ape e la sua coltivazione," by A. de Rauschenfels, published by U. Hoepli, Milan, the one in French, and the other in Italian, both deal with the anatomy of the bee, as well as practical work in the apiary.

H. L. (Westmorland).—*Making an Observatory Hive.*—(1) A three-frame observatory hive is the best. (2) You can use 36oz. glass; it will do quite as well. (3) 1⅜in. comb space is sufficient; if you make it more than this, the bees will probably build brace-combs.

J. T. B. (Peterboro).—*Glass Quilts.*—(1) You can use glass quilts as you suggest, covering them with some warm material, as without warmth the bees will desert the super. (2) The sugar is cane and suitable for bee food.

E. G. (Slough).—*Utilising Dark Honey.*—Do not attempt to use the honey for feeding bees, under the circumstances. It can be utilised for domestic purposes, such as for cakes or sweets, or in making vinegar or mead.

F. W. E. (Stroud).—*American Cloth for Quilts.*—We have many times given the reason why American cloth is not a good material for quilts. The moisture condenses on it and runs down into the hive, making and keeping it damp. Bees do not make the calico quilts air-tight.

F. W. (Chelmsford).—*Race of Bees.*—*Testing Cane Sugar.*—(1) The bees are the ordinary British variety. (2) It is impossible to give an absolutely reliable test without chemical analysis, but Dr. Blake gives a simple test for ascertaining if sugar has been chemically treated. He says that if some of the sugar is placed in a glass-stoppered bottle and left for a few days, if treated with chemicals the odour, when the stopper is removed, will be disgusting, but if, however, the sugar is pure cane, only the odour of molasses will be given off.

Honey Samples.

C. E. S. (Notts.).—The sample is nicely blended, and should stand a good chance in its class at a local show.

Suspected Disease.

J. F. S. (Stourbridge), T. K. (Carshalton) and Hill (Oxfordshire).—The bees have died from "Isle of Wight" disease. The stock should be destroyed without delay and all combs, quilts, &c., burnt, the hive being thoroughly disinfected.

Editorial. Notices, &c.

OBITUARY.

WILLIAM MCNALLY.

We regret to have to record the death of Mr. W. McNally, which took place at his residence, Glenview, Glenluce, on November 30th.

Mr. McNally was born on May 17th, 1855, and with the exception of two years spent in Glasgow, had resided all his lifetime in his native parish of Glenluce, Wigtownshire. After leaving school at fifteen, he was apprenticed to the trade of joiner and builder, and at twenty-two started on his own account, when by diligence he soon built up a thriving business. He factored a very considerable property in the district, and was clerk to the Old Age Pensions Committee. For a number of years he was also a member of the Parish Council.

Mr. McNally was well known as an extensive bee-keeper for the last thirty-seven years. He was first attracted to this industry in 1876, when he and his brother John, a lad of fourteen years, set out to bring home their first swarm in a skep, tied up in a sheet and suspended from a stout stick between them, and which they carried home a distance of four miles. The disastrous honey-year of 1879 found him with six hives, and these in 1880 dwindled down to two stocks to begin the season. From this small beginning the apiary rapidly grew until, in 1887, he owned 153 hives. During these years he exhibited extensively, and, besides numerous other prizes, he carried off five years in succession the silver medal offered by the Highland and Agricultural Society of Scotland, at the old "Caledonian" Show, for the best and largest display of honey and honey-comb.

Pressure of work since 1890 prevented him from engaging in honey competitions, and his spare time was largely taken up with judging at shows. He found his trade of use to him, as he was able to make most of the appliances he required for use. All the most up-to-date methods of running a large apiary profitably were adopted by him, so that large quantities of honey and wax could be handled and prepared for market with the least possible working expense, on similar lines to those of bee-men in America and elsewhere who count their stocks by the hundreds. He always found a ready market for his honey crop. One season he took three tons of honey from

THE LATE MR. WM. MCNALLY.

his own apiary, and had the whole disposed of by the middle of October of the same year. For a number of years his contributed articles have appeared regularly in the *Bee-keepers' Record*, and the practical and sound advice contained in them was much appreciated by readers. His last article appeared in this month's *Record*, and was only received two days before his death, when he wrote to say that he had been ill for three weeks and was just home from the hospital.

Some ten years ago he took up fruit-growing, and built up a large local trade in this business. His fruit commanded a much better price than that quoted in wholesale districts, for he found that customers preferred to pay more for freshly-gathered fruit than for that brought from a distance or from doubtful sources of cleanliness. Bees and fruit, though both begun by him as a hobby, had developed into a large part of his business, all of which showed what could be accomplished by patience and perseverance.

Mr. McNally's extensive bee-keeping experience had brought him into touch with all the prominent bee-keepers of the last thirty years, and he was a strong advocate of legislation. He not only supported the B.B.K.A. in their efforts to obtain legislation, but in 1895 collected information with regard to the spread of foul brood in Scotland. He pointed out that up to 1888 Wigtown was free from the pest, but at the time he wrote, in certain parts it had become such a scourge as to cause in those districts an abandonment of bee-keeping.

Mr. McNally's death is a great loss to bee-keepers, who, we are sure, will join us in extending our sympathies to his sorrowing family.

WILLIAM BERNHARD TEGETMEIER.

We regret to announce that Mr. W. B. Tegetmeier died at his residence, Golder's Green, on Tuesday, November 19th, in his ninety-seventh year.

William Bernhard Tegetmeier was born at Colebrook, Buckinghamshire, in 1816, and was intended for the medical profession. With this object in view, he studied at University College, where his contemporaries were Jenner and Sir Spencer Wells. A general practitioner's life, however, did not attract him, and the idea of a professional career was abandoned for that of science. As a boy, his fondness for animal life, exploring hedgerows and ditches, and collecting specimens, gradually developed into study and zoological research. He was fond of birds, and started an aviary for pleasure, which developed into a scientific columbarium, where he carried out experiments with the variation in pigeons. This work brought him in contact with W. Yarrell, the well-known author of several books on birds, and through him he was introduced to Darwin, who, in his book on the "Origin of Species," mentions some of Tegetmeier's work. The friendship between Darwin and Tegetmeier was long and intimate, and the latter carried out a number of breeding experiments, the results of which were embodied in Darwin's "Animals and Plants under Domestication."

Tegetmeier took a great interest in bees, and in 1858 and 1859 contributed two papers, one to the British Association on "The Formation of Cells," and the other in the *Transactions* of the Entomological Society of London, on "The Cells of the Honey Bee." He maintained that the bee constructed round cells, and as six is the number of cylinders which could be placed round a seventh of equal size, all in contact with one another, it was obvious that, originally, honeycomb was composed in this manner, and that the hexagonal form had been attained by the flattening together of the convex surfaces. Some of his experiments in respect to this are quoted in Cowan's "Honey Bee" (page 175).

Mr. Tegetmeier joined the staff of *The Field* more than fifty years ago, and his contributions to that paper were always eagerly read by naturalists. He was a voluminous writer, and contributed no less than 1200 leading articles in consecutive issues of *The Queen*. Besides being the author of several articles in the "Encyclopædia Britannica," he published a number of works on birds and other animals, his book on poultry-breeding being a standard. He was an authority on the subject of homing pigeons, and some years ago supplied them to the Government, and gave the necessary advice for the establishment of pigeon posts. The death of Mr. Tegetmeier causes one of those gaps which it is almost impossible to fill.

REVIEW.

Bees Shown to the Children, by Ellison Hawks (London and Edinburgh: published by T. C. and E. C. Jack, price 2s. 6d. net). This is of the "Shown to the Children" series, edited by Louey Chrisholm, and in the volume before us the author endeavours to interest children, not only by describing the bees and their life in a hive, in a simple manner, but also by giving a large number of excellent illustrations. The 120 pages are divided into forty-five chapters, which are short, but just sufficient to give the children an insight into the wonderful structure of the bee, and a general idea of the organisation of a stock. There are thirty-nine plates, some of them containing excellent photo-micrographs taken by

the author of such parts as the tongue, legs, jaws, and wings. A comparison of the sting with a fine needle by the side of it demonstrates the perfection of the work of Nature and the coarseness of the best work of man. There is also a capital enlarged picture of a drone, but the plates of queen and worker hardly do justice to them. The colouring in some of the plates is rather fanciful, especially the one showing the storing of pollen in cells; on the other hand, the picture of delphiniums is as good as could be desired. In a few simple words, which show that the author is used to writing for children, he explains the object of the bees in visiting flowers, so as to induce children to take more notice of them. Of course, in a little book of this sort it is not to be expected that much space can be devoted to enemies, but we are told that "bees have their fleas, too," and the author refers to a picture of a parasite on plate 34, common on the humble bee, but not usually found on the honey bee, whose life is being described. We are pleased to be able to recommend the book, and think it would make an excellent Christmas gift for children.

W. BROUGHTON CARR MEMORIAL FUND.

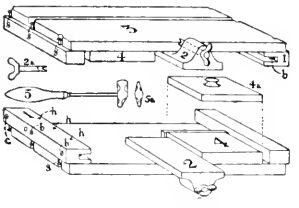
	£	s.	d.
Amount already acknowledged...	9	9	10
Miss Wyburn	0	5	0
Mrs. Woosnam	0	5	0
F. W. L. Sladen	0	5	0
G. L. W.	0	5	0
Will Hampton	0	2	6
Rev. F. S. Jannings	0	2	6
G. Bryden	0	2	6
E. Henderson	0	2	6
W. D. Ridley	0	1	0
	£11	0	10

AMONG THE BEES.

By D. M. Macdonald, Banff.

Foundation Fixing Outfit.—This ingenious contrivance is the invention of Mr. Low, Rosehall, Newmachar, the enthusiastic secretary of the Aberdeenshire B.K.A. It consists of a wiring board fitted to accommodate either standard or shallow frames, having an adjustable chisel to open up the saw-cut in the top bar to receive foundation. The other side of the board has an end-piercing jig, and a block for fitting foundation in sections. I was much taken with the device when seeing it in operation in Mr. Low's workshop, and he gave a demonstration at the annual show, which was highly appreciated. It showed speed, accuracy, and facility of manipulation such as I have never before seen in any system of foundation fixing.

The following is Mr. Low's own description of the apparatus:—The end-bars are first slipped into the slotted cleat or jig, marked (1), and the bradawl is inserted in the holes (h h). Observe the adjustable screws (b b) for taking any width of frame in order that the wire holes will always be immediately in the centre line. The long screw (c) acts as a stop for standard ends, and may be shifted to a similar hole for shallow ends. After the end bars are pierced the frame is knocked together and placed on the other side of the board (3), the screws (s s) at either end having been adjusted to suit the width of end bar. Ordinary frames having either narrow or wide top bars may be wired without alteration of the adjustment screws. The slot opener (2a) sliding in the projecting arm (2) is then pressed into the saw cut with the prongs in line with the slot, and is given a quarter turn, which opens the saw cut. The foundation is then inserted, the forked chisel allowing it to enter to the proper depth, and acting as a stop. The wire is then threaded



through the holes in the end-bars without removal of the frame from the board.

The wire must be pulled tight with one hand until it twangs, whilst the other assists in smoothing and releasing it in the frame. My mode of fixing is to drive a tack into the hole along with the wire, which fixes it firmly in position. My special hatchet embedder (5) is then run quickly along the wire. The mass of metal in this form of embedder enables it to retain heat for a considerable time, and thus, supply a more even heat. An end-view of this is shown (5a). The saw-cut opener is then pulled back sufficiently to enable the frame to be removed from the board, when a fine pin may be driven through the top bar to keep the halves together.

Foundation may be fixed to top bars having no saw-gate, by holding the board at a suitable slope, and running a little molten wax along the junction of foundation and top-bar.

The block (4) is for use in filling sections with sheets of foundation. If the section is not square when folded, squeeze diagonally, so that when released the section fits without pressure.

Place the sheet of foundation in place, hold it in position with the block (4a) and fold the remaining half of the split top.

This will ensure that both section and sheet of foundation remain perfectly square.

Gorse as a Honey Plant.—Gorse furze, or whin, is encountered in large areas all over our island, and I presume is everywhere highly esteemed as a source of both early and late pollen, for in most seasons it flowers almost continually. The old saw says, "Gorse, like kissing, is never out of fashion." As a honey plant its position is not so well assured. One authority says, "On our whinstone strata the whin abounds, and on a rocky hill about a mile distant, well-covered with them, my bees work diligently." Another says, "In a stretch of some fifteen miles' walk I encountered a good deal of this plant, but I did not see a single bee on any of its flowers." Another says, "As furze abounds in the wild state and in hedges I have watched our little favourites at work on it, and my opinion is that although it yields a great quantity of pollen, bees gather no honey." A bee-keeper near Manchester writes, "Bees collect a quantity of both pollen and honey from *Ulex Europæus*, or whin." One from Sussex reports, "The plant is very abundant, but I regret the want of taste in our bees, who do not appreciate this beautiful bloom. I never saw our pets show any partiality for the golden blossoms." A Fifeshire bee-keeper values it highly and looks on it as a valuable asset when spring breeding is going on. Bees here do visit it for pollen when the plants are near at hand, and carry home a quantity of dark, dull, yellow pollen from its blossoms. I cannot plead for it that it is a good honey plant, but I consider it does yield some nectar.

Sic vos non vobis.—These Latin words form a motto very extensively quoted by ancient writers on bees, and used by them on their title-page. They mean, "Thus you toil not for yourselves" and they are very appropriate to the bee commonwealth, for their toil doth sweeten others. When it is understood that only a tithe of the busy toilers will ever even taste the contents of those sealed vats into which the sweet fruits of their labours are so diligently consigned, it can be realised how unselfish are their labours. The bee which issued from its natal cradle with the first dawn of July, and toiled daily at its indefatigable task, foraging abroad in the fields, levying toll from every flower visited, is by the closing days of the month already showing itself toilworn and weary, with ragged wings unable to buoy up their owner and carry her to the distant fields rich in their ample flow of nectar. Aged and spent with labour, beneficial to the community, but profitless to the individual, she falls down amid the sweet perfume of the fair sweet clover redolent of nectar—to die. A new-born sister steps into the gap, taking her place as a nurse, comb-builder, pollen-gatherer, collector of nectar, or a storer of luscious honey. She plods on industriously all through the varying days of August, storing eagerly for future generations, whose advent she will not survive to see. Those late-hatched ovipositings, who have never known what it is to toil and suffer, feast on the ambrosial sweets garnered industriously by their forbears. Thus presciently do these vestal virgins make provision for generations yet unborn, in order that the race may be perpetuated for all time.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE COMPOUND EYE OF THE BEE.

[8609] In reference to the interesting photograph (page 446) taken through a bee's compound eye, may I say that some years ago I advanced a theory as to the uses of these eyes in furthering the homing instinct of the bee.

I had made a number of experiments—none of which proved negative in my opinion—but alas there came a break in my bee-keeping, and time and other circumstances have left me years after "no forrarder" in the matter. In the hope, however, that others may take up the interesting study, will you allow me to bring it forward, for what it is worth.

It is of course stated that bees see only one image at a time; this may be so, but I believe that it is only partially true, and that it is by means of the compound eyes that bees manage to find their way back over a tract of country they have once traversed.

I suggest that what happens is this: when the bees leave the hive, and during the backward and forward flight, they mark the locality and memorise its situation, making use of some of the common eyes, but upon getting further away from the hive, that a series of what I may term (for want of a better) miniature photos are impressed in a given order on the facets of the compound eyes, and these being retained on the cornea are used to guide the bee in its homeward flight. It may be that this takes place on each flight,

and that the whole of these impressions are removed on returning to the scope of the common eye; or it may be that such impressions can be retained at will, and reproduced and used, even days after, to again guide the bees in going and returning to where they had previously found nectar.

To carry the matter a little further, think how this will explain the conduct of a swarm; most of them, of course, old bees and with the "locality sense" well developed, yet we know that they will settle in a new habitat not very far removed from the parent hive they issued from as a swarm. To see how this is arrived at, assume that before or shortly after swarming they obliterated from the eye facets and brain all traces of former flights; the bees would then have no difficulty in preventing themselves being led into returning to their former stock hive; except such as the "close vision" of the common eye would give, and this they obviate by marking the spot previous to flying in the well-known backward and forward preliminary flight.

It may not be advisable with our present knowledge of the subject to allocate too closely the functions of each of the eyes, but it may be well to note that probably some of the common eyes can be used in the semi-darkness of the interior of the hive.

I hope, in publishing this, that it may give rise to a discussion and induce some fellow bee-keeper to experiment along the lines I now have no time and opportunity to follow.—WILL HAMPTON, East Sheen.

THE DISEASES OF BEES BILL.

[8610] A very familiar old saying runs as follows: "Convince a man against his will, he is of the same opinion still," and for that reason I will not try to convince Mr. C. B. Bartlett (page 475), but give my own experience for the benefit of other readers. There is no doubt whatever that most members of bee-keeping Associations are supporting the Bill, but I claim that far more than ten per cent. of bee-keepers belong to these county associations, and I question, even, if the majority of those who are not members are worthy of consideration. I suppose that all county associations who receive grants from County Councils follow the same plan as we do in Derbyshire, where our experts visit members and non-members who will allow them to do so, the latter receiving the experts advice without paying for it. Perhaps that has something to do with the fact that so many are outside our associations. Mr. Bartlett says, not more than ten per cent. of the associations' members are in favour of the Bill. I do not know a single member of our association who does not give the Bill hearty support, as do also many of the non-members. He also says the majority of hive owners are against the Bill. Why? Is it because they are afraid that the Inspector may give some of these a call, find things not just as they should be, and prevent these large hive owners from sending their bees out broad-cast. This I do know has been done by some extensive bee-keepers, (or dealers if you like) sending out bees to three different persons, which developed "Isle of Wight" disease, and had to be destroyed; one case being noticed as soon as the bees arrived. In two of these cases, the bees purchased were the only stocks the purchasers had. I do strongly object to large hive owners, for the sake of £ s. d., sending diseased bees into my neighbourhood, to be placed near my apiary, for, while my bees are free from disease, I know not how long they may remain so. I was in Essex this autumn on a holiday, and visited five bee-keepers who, I regret to say, had all lost their bees through the "Isle of Wight" disease. This week I had a letter from Hampshire, asking me if I thought the Bill was likely to be passed soon, and saying, that if it was delayed for another two years it would be useless, as there would be no bees left at the present rate of mortality. I cannot see what Mr. Bartlett and his friends have to fear if their bees are healthy. I have confidence in the Council of the B.B.K.A., seeing that efficient men are appointed as Inspectors, who know their work. They would not want to pull the hives about, the outward symptoms being quite sufficient to satisfy anyone regarding "Isle of Wight" disease. I have not seen many stocks affected with this malady, but quite enough to be sure that I could not mistake it. Some very painful letters have reached me about the disease. One working man lost 100 stocks, another lost two apiaries of forty stocks each. I do not know if these are to be considered large hive owners, but they are looking with anxiety to the passing of the Bill, and for the reason stated I give it my hearty support. Hoping the Editors, and all brother bee-keepers may have a Happy and Prosperous New Year.—J. PEARMAN, Penny Long Lane, Derby.

BEES IN MICHIGAN.

[8611] A few lines from this part of the bee-world may be of interest. The winter of 1911-12 was a hard one, when one-half to two-thirds of the bees in this latitude perished. Those on summer stands, out of the cellars, fared the worst, and as many farmers neglected to care for their bees properly, the loss has put them out of

bee-keeping. A prominent supply dealer told me last week that his sales had been much less than for many seasons, owing to there being fewer bees and more second-hand appliances offered than usual.

The past season has been a good one, white clover blooming early and for a long time. We also got honey enough from buckwheat for winter supplies.

The swarming impulse was the strongest for many years, so that those who desired could easily increase by natural methods. I began the season with fourteen colonies. I found American foul brood in nearly half of them, and promptly administered the McEvoy treatment, which proved effective. I do pretty thorough cleaning, using the blow-lamp on suspected fixtures, hives, &c. I closed the season with twenty-eight colonies, mostly strong, in ten-frame hives, well stored for winter. I recently sold out my bees, but will get more in the spring. Bees in this locality were put in the cellar on November 20th.

The autumn has been fine for clover, and the outlook for next season is bright. Bee disease has a tendency to reduce the number of those keeping them and to make these more expert. At this point bee-keepers' conventions and bee literature have a large place. Every bee-keeper should have several good books and one or more journals ready at hand for study. I appreciate the "British Bee-keepers' Guide Book" and the BRITISH BEE JOURNAL most highly. I also find some of the old authors interesting and helpful. As the winter comes on, it will be a good time to do some reading—be sure the "other fellow" can teach us something.—EDWIN EWELL, Michigan, U.S.A.

BEE-KEEPERS' ASSOCIATIONS AND THEIR WORK.

[8612] As a bee-keeper of long standing, I was much interested in the notes of your correspondent, Mr. Smallwood (page 457), on the foundation of Bee-keepers' Associations, particularly the mention that the Staffs. Bee-keepers' Association was one of the first to be formed.

Those notes showed me that there must have been plenty of energy in the Staffordshire bee-keepers then. Nowadays things are different. The most one hears at the present time is an appeal for subscriptions at the end of the season, and receives the annual report in the spring, together with a balance sheet.

I think an expert's visit at least once a year should be given, and it would be more welcome than a report which says the Association is teaching bee-keeping to children in schools. I know others besides myself who have not had a visit from the expert for years (this probably accounts for the low percentage of disease reported in the county). But then the County Council grant and teaching in schools are probably more attractive than the arduous duties of visiting-expert work and teaching grown-up people how to keep bees.

Evidently there is something wrong, and it is no wonder that the Association is not in the flourishing condition it should be. That the Association does not succeed in keeping in touch with the bee-keepers of the county is shown by a member stating at the last annual meeting that in a certain village only one out of ten bee-keepers was a member.

I trust these notes will wake up the officials to their responsibilities, so that this old, and at one time useful, Association may do the work it was founded for, and not be run as a one-man show. I enclose name and address, according to your rules, and sign myself.—A STAFFORDSHIRE BEE-KEEPER.

SUBDUING BEES.

[8613] I see that on (p. 488) "Somerset" advises six or more powerful puffs of smoke to be given into the entrance before opening a hive. Now, except when the honey season is over and the bees a very vicious lot, is such a dose of smoke at all necessary?

I find it quite sufficient when honey is coming in, to raise the quilt gently and puff a little smoke between the frames, replace the quilt, wait a minute, then proceed to turn the quilt back, giving a little more smoke over the frames as required, and go on with whatever manipulation is necessary. I seldom get a sting, and the bees are not checked in their work as they would be with such a strong dose of smoke as is recommended by your correspondent.

The Proposed Bee Diseases Act.—I have suffered much in the past from a bee-keeper of the "clever" class, who belong to no association, and do not know foul brood when they see it, leaving hives that have died from the disease for their neighbours' bees to clear out. So I am now in favour of the Bill, and do not think that the Inspectors under the Act would give needless trouble to anyone.—H. W., Kent.

SENDING HONEY BY PARCELS POST.

[8614] It would be as well to warn your readers against sending honey by post. Last week I sent a 7lb. tin of honey carefully packed in a wooden box specially made to hold it. This morning the package was returned to me with the box damaged, the tin bulged in and half the honey gone! This result is due to the Postmaster-General's policy of abolishing hampers in favour of sacks. I am afraid I shall get no compensation.—C. L. M., Tiverton.

"BLURTS FROM A SCRATCHY PEN."

[8615] *Old Bee Journals.—The B.B.J., No. 2, Volume I.*—The "Editorial" in this number, teems with solid advice, so fit and applicable to the days we now live in, that I am going to dip into it freely. One point, however, puts me at differences with the "Conductor." To increase the circulation of his journal he offers premiums to subscribers and clubs who take six, twelve, or twenty-four copies, to wit, "a new and well-made Woodbury hive," or "a pure Ligurian queen, a Stewarton hive," or a "Cottage Woodbury, or two pure Ligurians," and for the maximum quantity—"A Woodbury bee-house or a set of Stewarton hive-boxes with a full swarm of bees, with a pure Italian mother." I hold that "good wine needs no bush," and the truth of this proverb is manifested without any possible negation by the great circulation in all parts of the world of the latter-day BEE JOURNAL. Evidently the "Conductor" is himself conscious of an action *infra dig.*, as he apologises in advance, and *qui s'excuse, s'accuse.*

But let us get at something with more grit in it. He proceeds as thus: "We endorse the opinion that it is the *positive duty* (the italics are his) of all who have bee culture at heart to enlighten their neighbours and advance the profitable pursuit in every way." Now this is better, Mr. Conductor; and there is better to come: "Everyone holding a position which will enable him to further the interests of his poorer neighbours, by urging the cultivation of bees as a means of increasing their income, has a duty to perform which he ought not to neglect, not only for them, but as a means of increasing the wealth of the country at large."

I am sure I am right in saying that one of the greatest delights of apiculture is, that our business or recreation, as we choose to make or call it, is essentially philanthropic. Every child knows the mission of Nature to the bees, as fertilisers, but every grown-up person does not think that thousands of tons of honey every year are lost—never gathered. If this fact was hammered, sledge-hammered rather, into the minds and memories of every association or society, having in view the welfare and advancement of the people, we should have honey as familiar as jam or marmalade on the breakfast table. It is much easier to produce; in fact, as we all know, it comes to hand ready-made, and the only trouble is to market it. We have no statistics to guide us; but the amount of honey it is possible to produce, if there were hives and bees enough for the gathering, would fall very little short of the amount of jams manufactured. It may be argued that honey would be much cheaper. So be it. But would not the net revenue be twice or thrice as much, possibly even greater? Listen again to the article: "Our forests, our plains, our fields, orchards, gardens, hedgerows, and even our waysides, teem with flowers and blossoms in their several seasons, yielding abundance of delicious nectar which is allowed to waste its sweetness. Why are there not more bees cultivated in this country, and why has not every allotment, from the limited gardens of cottagers to the wide domains of the noblemen and apiculturists of the great garden of England, its proportionate apiary?" Can I find stronger or better words than these for my theme? They are worthy of reprinting and distributing broadcast. But the answer is: Bee-keeping is not understood as it should be. It is ignored because of the paltry stings, and it ranks lower than poultry-keeping, which is not half as profitable. What a grand work then is that of the British Bee-keepers' Association, to organise, to teach, to develop new fields, to find more labour and labourers, human and insect, "to increase the wealth of the country," as quoted before.

There is an interesting letter from M. C. L. (Manchester), historical as the first mention of experts. The writer says: "It would be a great boon, that is, the establishment of a society of travelling experts as bee doctors," and in a P.S. is added: "In view of the formation of a Bee Guild, could not a committee of experts grant certificates of ability to those willing to undertake this branch?" Coming events cast their shadows before.

W. Augustus Munn (Major) is the next correspondent. A never-to-be-forgotten name, for he was the inventor of the bar-frame hive in 1834, patented in Paris in 1843. Langsbroth and Dzierzon brought theirs out simultaneously in 1852. His letter is interesting in his references to Huber, whose father, we are told, was "among the witty and vain who formed Voltaire's clique at Ferney—a precocious and enthusiastic child," and he also brings in Daniel or Thomas Wildman, who performed or juggled with bees at the "Three Hats at Islington." But of this worthy I shall have more to say in a following letter.

A "comic" element is always necessary in the concert to break seriousness and avoid monotony. This is afforded by "Novice." He is writing from some heathen country evidently, for speaking of the "old Fogeys," he says they entertain the idea that the queen is the king, or "governor," as some call her, that the drones are the females that lay the eggs, and of one who lost twenty-four out of thirty-five hives when he recommended him to feed in the autumn, his reply was characteristic:

"Not I: I have never fed my bees, and do not see the good of it. If they cannot get enough to live on, let 'em die." What a blessing it is that these old Sulphurcides are less frequent nowadays. They are not quite extinct; I have met similar stupidity. But we are going to have the Bee Diseases Bill now, and I take it that stupidity about bees and bee-fixing is one of the very worst enemies the poor bee has to encounter. Surely, therefore, it is within the scope of the Act.—J. SMALLWOOD.

POLLEN IN DECEMBER.

[8616] The bees from a number of my hives have been carrying in loads of pollen to-day (December 8th). They evidently obtain it from the late ivy.—H. T. ICINGBELL, Taunton.

RECOLLECTIONS OF AN OLD HAND.

By James A. Abbott.

(*Continued from p.* 233.)

I have received privately so many tokens of appreciation of the photographs shown in my first contribution that I again venture to send some specimens of my old hobby. The first is a

MR. GEO. HENDERSON.

portrait of Mr. George Henderson, for many years (the first) librarian of the B.B.K.A., an appointment for which his exceptional knowledge of languages well fitted him. He became a bee-keeper after the first Crystal Palace show, and during the demonstrations with live bees he never missed the show for a moment, but spent the whole of the three days about the bee tent as if fascinated, as he said he was. The second photograph is of myself, taken recently with the assistance of a helper to take the cap off the lens while I, of course, did the looking as pleasant as I could, and the remainder of the work afterwards. It may appear

MR. JAS. A. ABBOTT.

a self advertisement to send my own photograph for publication, but several people have expressed a wish to know what I look like. A matter of more general interest would be the way I have cleared honey and wax by electricity. The electricity was used simply to generate heat, but the heat was kept so exactly under control that the honey could be kept hot for several days without becoming hot enough to spoil the flavour. Perhaps this also will be too much like a free advertisement, as since I had to give up my bee business I have become an electrician, and am now inventing things in that line. My early attempts at making mead may not be without interest. When quite a boy I made a quantity from refuse honey, but being a total abstainer I never drank any myself, relying on the opinion of my father who declared it was no good, and it was eventually used to regale the workmen, &c., who would otherwise have been given the price of a drink. However, a good judge of alcoholic liquor tasted it when it was nearly all gone, and his opinion was so favourable that the remainder was used only to win first prizes at shows, which it never failed to do. The peculiarity about it was that nothing was added to the honey but warm water, and a little yeast to start it; there was no boiling or addition of other flavouring. I have since often made other brews in the same way,

and lately sent to our junior editor a sample for testing, but he, like myself, is a teetotaler, and has not yet reported on it. The Rev. Mr. Bancks, author of a good pamphlet on the making of mead, also spoke well of the sample I sent, but pointed out that he considered the boiling necessary to kill strong ferments. I can only say that I have never spoilt a lot by not boiling it, and my experience has been that no bad results came from this omission, by which I suppose I got what is known as "Learner's Luck." That reminds me of an old saying of my father's, that "Nothing succeeds like success," and I succeeded at all points with my mead except keeping it. I do not mean that it went bad, but it simply disappeared. Perhaps housekeepers or bookkeepers could tell where it went, but I seldom saw the going of it.

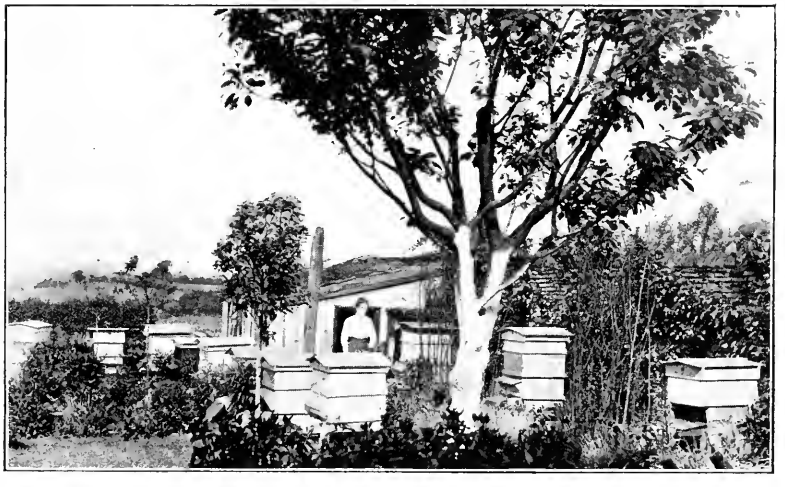
(*To be continued.*)

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

When a lady assists her husband with his bee-keeping, her bravery compels our admiration, but when she keeps bees "on her own," it is intensified two fold. Mrs. Proctor, to whom we are indebted for the above photograph, possesses the true bee-keeper's spirit, for, disdaining the usual gifts of jewellery, gloves, &c., bestowed by affectionate husbands on the occasion of their wives' birthdays, she chose instead—*a swarm of bees.* Though this swarm fell a victim to a dire disease, it was not allowed to perish; its owner doctored and cured it, and from this small nucleus the apiary shown in the picture has grown. The notes, all too brief, written by Mrs. Proctor at our request to accompany the illustration, give a short history of her career as a successful bee-keeper, for that she is this can be read in the few lines she has favoured us with. How many "mere men" can say, "I had no difficulty in selling my honey at remunerative prices?" She writes as follows:—

"My interest in bees dates back to shortly after my marriage, over twenty years ago, owing to my becoming acquainted with an old skeppist bee-keeper. On my birthday in 1907 my husband bought me a swarm, which developed foul brood. I was advised to destroy the bees, but not caring to do that I made a swarm of them, and cured them. My bees were not attended to as they ought to have been until 1910, when, after visiting Lancaster Show and hearing a lecture by Mr. W. Herrod, I determined to devote more attention to them. By the beginning of 1911 my stocks had increased to six, and these, one of which I artificially swarmed, gave me over 400lb. of honey, all of which, with the exception of what was given away, I had no difficulty in selling at remunerative prices. My husband, although not a joiner, has made all my hives with the exception of three. I enjoy reading the JOURNAL and *Record*, and find some very good advice in them. I should not like to be without bees, even if I got no surplus."



MRS. T. PROCTOR'S APIARY, MONYBENT, BENTHAM, LANCS.

Queries and Replies.

[8571] *Preventing Loss of Swarms.*—(1) To prevent loss of swarms when absent, would the following plan answer? Before queen-cells are sealed, place a frame with queen in a separate brood-chamber, fill up with frames of foundation, and put this on top of the original brood-chamber with excluder between. After the young queen had mated, the old queen could be removed, leaving the upper story on. (2) Would there be danger of bees swarming when the young queen went out? – S. H. K., Locher.

Reply.—(1) Your plan would entail a lot of trouble, and the result would be doubtful. Why not use a Brice swarm-catcher? (2) It is quite possible.

WEATHER REPORT.

Westbourne, Sussex.

November, 1912.

Rainfall, 2·15 in.	Minimum on grass, 21 on 28th.
Below average, ·87 in.	Frosty nights, 8.
Heaviest fall, ·47 on 28th.	Mean maximum, 48·4.
Rain fell on 16 days.	Mean minimum, 38·0.
Sunshine, 31·6 hrs.	Mean temperature, 43·2.
Below aver., 36 hrs.	Below average, 0·2.
Brightest day, 1st, 6·2	Maximum barometer, 30·380 on 2nd.
Sunless days, 11.	Minimum barometer, 29·103 on 29th.
Maximum temperature, 55 on 7th and 21st.	
Minimum temperature, 27 on 28th.	L. B. Birkett

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

Fair Play, Truth, Bombus, and Britisher (Staffs.).—*The Development Fund Grant.*—We had seen the statement you refer to but did not consider it of sufficient importance to reply to it. It is no doubt intended to convey a wrong impression. The gentleman named had nothing whatever to do with obtaining the grant to the B.B.K.A. from the Development Commissioners, and we question if even up to that moment he knew that one had been given. The writer evidently draws upon his imagination to a considerable extent, for, in the same paper, on a previous occasion we noticed that he stated that the sum obtained was £1,200, whereas it is considerably less. It would be more creditable to the paper if it verified its correspondent's statements by comparing them with the official reports.

H. F. F. (Mill Hill).—*Avoiding Disease.*—The disease may possibly spread to your apiary. You should persuade your neighbour to destroy the bees, combs, quilts, &c., and thoroughly disinfect the hives, and also the ground upon which they have been standing. Nothing else can be done at this time of the year.

G. T. J. (N. Wales).—*Experts' Examinations.*—(1 and 2) We have sent you the desired particulars. (3) You should have several years' practical experience. (4) The nearest association is Hereford, Hon. Sec., Mrs. H. Mynors, Llanwarne Rectory, Hereford.

W. P. R. (Bettys-y-coed).—*Imports of Honey.*—The imports from January to October can be found in Bee Journal for this year. The returns for November have not yet been sent to us by the Statistical Office.

Suspected Disease.

Sufferer (Worcester).—The bees have "Isle of Wight" disease.

J. G. (Perths.).—The bees were too decomposed for examination.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ¼in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

1 GROSS screw cap jars Clover Honey, 9s. doz., packed on rail.—BARNES, Clogger, Wigton. v 25

800 1lb. screw cap jars granulated Clover Honey for sale.—R. C. MASSAM, Normanby-by-Spital, Lincoln. v 24

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 34

GENUINE Italian Mandoline, also Violin; exchange for Honey or Fruit Trees.—EDEN, "Sycamore's," Chadlington. v 23

Editorial, Notices, &c.

THE BEE DISEASES BILL.

In our article on this Bill on page 481, we tried to remove the misunderstanding prevalent in some quarters respecting its provisions, and our attention has been drawn to the remarks referring to destruction, in Clause 2, which do not correctly interpret the powers of the Board of Agriculture. It was stated that the Board "may authorise the destruction of any colony of bees so affected, and any receptacle (other than a movable-comb hive), subject to payment by way of compensation of the value of the thing destroyed." It was also stated that it would allow of the destruction of skeps and box-hives, subject to payment of their value. This, however, is not the correct interpretation, and lest there should be any misunderstanding, we think it right to explain that any diseased colony or receptacle (other than a movable comb-hive) may be destroyed *without* compensation, and any *other* thing if compensation is paid. This is reasonable, as a skep or box-hive containing a diseased colony is of no value and only a danger. Movable-comb hives come under "any receptacle" and "thing," and are not excluded from destruction, only from destruction without compensation. This also is reasonable, because with them generally disinfection is possible, but there may be instances where destruction would be advisable, and in such cases it would be "subject to payment by way of compensation for the value of the thing destroyed." There is quite as strong a feeling against compensation as there is for it, so that we hope this explanation will be satisfactory to all parties.

WESTERN PROVINCE (SOUTH AFRICA) B.K.A.

ANNUAL MEETING.

The above Association, which was formed in Cape Town twelve months ago, held its first Annual General Meeting in Cape Town on 15th November last. The Annual Report was read, from which it was elicited that steps were taken immediately after the formation of the Association to affiliate with the South African B.K.A. (affiliated to the British B.K.A.), so that by combined efforts advantages not possible to be enjoyed by separate organisations would be realised. One of the outstanding features of affiliation is that members receive the monthly issues of the *South African Bee-Keepers' Journal*, which the parent Association has published for just over twelve months.

The Committee has, during the year, organised a honey depot where members can forward their honey to be sold by the agent at retail prices, less a commission of 15 per cent.

In connection with the depot, labels have been printed, which are issued to members upon their signing a declaration pledging themselves only to use the label for honey which is of standard quality. The label then acts as a guarantee of quality to the purchasers, who, we learn, have shown their appreciation of the efforts of the Committee by requesting, when ordering honey, that it be labelled with the guarantee label.

The Committee also approached the local Agricultural Society with reference to the staging of honey exhibits at the 1912 show; as a result, the Society provided better accommodation for the exhibits in the Honey Section and gave the Association permission to carry out the staging. The Bee Tent, lent by the South African Bee-Keepers' Association, was erected in a most prominent part of the show grounds, from which lectures on bee-keeping were given by Miss M. D. Sillar, and were attended by large numbers.

Field Meetings were held at various apiaries during the year, and although the attendance did not altogether come up to the Committee's expectations, still it is hoped that as a result, the use of modern appliances will become more general and bee-keeping be placed on a more firm basis. Lantern lectures are to be arranged in the near future after which an essay competition to be competed for by children attending public schools will very probably be organised.

The financing of the Association proved a somewhat difficult problem for the year; the initial expenditure, including the cost of printing the labels, exceeded the revenue received, but the Committee are hopeful of being able to increase considerably the membership during 1913, which will be the means of extending the usefulness of the Association for the end it has in view—that of assisting bee-keepers and developing the industry.

In moving the adoption of the report and balance sheet, Mr. J. J. Michau stated that the Committee were to be congratulated upon the amount of work accomplished during the past twelve months; especially were their thanks due to the untiring efforts of their Secretary, Mr. L. Hardwick, and he, furthermore, moved that a vote of thanks be accorded to Mr. Hardwick for the interest he had taken in the work. In thanking those present for their words of appreciation and encouragement, Mr. Hardwick said he hoped that at a not far distant date, a large proportion of the bee-keepers would be enrolled as members in order that the Association would become a strong and influential body to advance the bee industry in the Union of South Africa.

The following were the officers elected for the ensuing year: President, The Right Hon. Lord De Villiers, P.C., K.C.M.G.; Vice-Presidents, The Minister for Agriculture, Messrs. W. E. Moore, and J. J. Michau; Chairman, Mr. W. J. S. Welsh; Vice-Chairman, Mr. A. J. Attridge; Committee, Messrs. J. G. Brand, J. Flack, J. A. Garner, A. J. Hopper, W. Perry, W. Terrell; and Mr. L. Hardwick, Hon. Secretary and Treasurer.—*Communicated.*

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

Drones with Red Eyes.—Madame L. Dennler mentions in the *Elsass-Lothringischer Bienen Zeitung*, that in 1910 her husband found in one of his strongest colonies drones with white eyes. This curious phenomenon was repeated in the same hive in 1911. Since then the mother of these drones, which are called "albinos," has died and the white-eyed drones have disappeared. This peculiarity in the hives is rare, and during his long bee-keeping experience M. Dennler has only met with it once previously. Dr. Bresslau, professor at the University of Strasburg became interested, and on several occasions visited the apiary for the purpose of making observations.

The albino drones are in every other respect equal to those with dark eyes, and share with them a similar appetite. Their eyes are simply deficient of pigment, which makes them blind.

About the same time a young Carniolan bee keeper, M. Ivan Strgar, of Wittnach, noticed a colony in his apiary which produced drones with red eyes. These eyes resemble rubies set in a black framework and so present rather a curious and strange appearance. This was the strongest and most productive colony that the young man had. Last spring it again produced red-eyed drones, and it was noticed that it was even stronger and more active than in the previous year. In July M. Strgar also noticed red-eyed drones in another colony which likewise yielded as large a return in honey as the other one. It would be interesting to find out whether colonies having red-eyed drones are especially productive. Also if queens mated with such drones are more prolific layers. If this were really the case such drones would be of great service to the bee-keeper.

[White-eyed drones are frequently found; we have had them in our apiary, and we have a collection of them which we obtained some years ago in the apiary of M. Bertrand, in Switzerland.—Ed.]

The Weight of Bees.—We read in the *Schweitzerische Bienen Zeitung* that Professor Korrs has weighed bees by means of a very sensitive laboratory chemical balance capable of registering to a tenth of a millegramme. As a result of his experiments he has found that the average weight of a single bee is one decigramme (1.54 grains) so that 10,000 bees would weigh about one kilogramme (2.2lb.). Bees returning from foraging weigh 25 millegrammes more. It therefore requires forty loads of nectar for one gramme (15.43 grains), or 40,000 loads for one kilogramme. As some of this nectar becomes evaporated, at least 60,000 journeys are required to produce one kilogramme of sealed honey.

Destroying Ants.—It is frequently asked how to destroy ants which sometimes enter apartments, especially during the month of August. M. Girard, a Parisian baker, writing in the *Bulletin des Halles* gives the following recipe: Dissolve one kilo (2.2lb.) of hyposulphite of soda in 10 litres (2.19 gallons) of water. This is sprayed, either hot, cold or tepid, into all corners and crevices frequented by the ants. It soon makes them disappear. The operation should be performed with an ordinary toilet vapouriser and it is not necessary to inundate the place, as a slight spraying is quite sufficient for the purpose. If by chance their nests are found, the same solution poured on them while hot will quickly destroy them.

Tunisian Biscuits.—M. Bourgeois gives the following recipe for these in *l'Abeille de l'Aisne*: Knead 1lb. of flour with 3½oz. of liquid honey, and ½lb. of fresh butter, add powdered vanilla to taste, or, some other flavouring. If the paste is too thin add more flour, for it is essential that it should be stiff. Flatten with a rolling-pin to the thickness of about 1in. Put it on an iron sheet surrounded by a tin circle, both being slightly greased to prevent the paste from sticking. Score the surface and bake for one hour in a moderately hot oven.

NECTAR PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

(Continued from page 413.)

RASPBERRY (*Rubus idæus*).

No. 22. NAT. ORDER. *Rosaceæ.*

The wild raspberry, the source from whence the raspberry of cultivation was derived, is a plant of the commons and woods generally distributed over Britain, being more abundant in the North than in the South. In its wild state it attains a height of from three to four feet. The root stock is perennial, creeping underground, while the flowering shoots thrown up are biennial, and rise freely in an erect position. They are downy in appearance and covered with somewhat weak prickles,

as compared with their close allies, the blackberry.

The petals of the flower are white, small, and five in number. The blossoms are borne in branched panicles at the ends of the stems, and sometimes assume a drooping position.

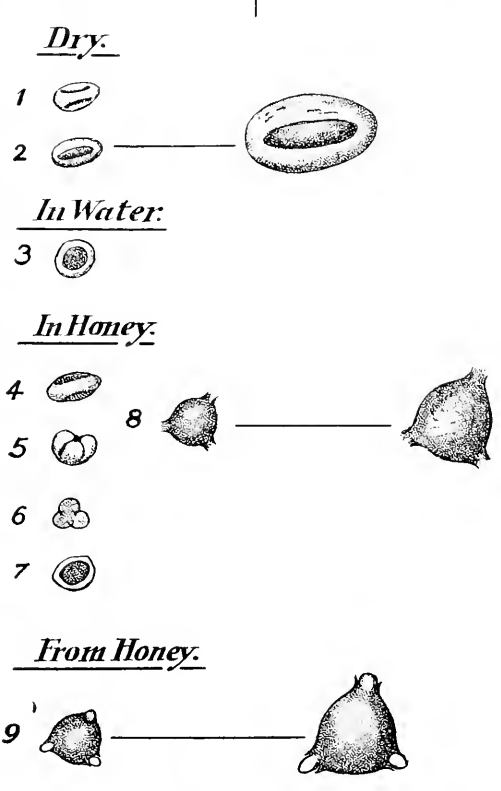
The generic name, *Rubus*, kindred with *ruber*, red, means to be red, whilst the specific name is derived from Mount Ida, of classical celebrity, on which—the old writers state—this shrub grew.

There are two kinds in cultivation—a red, and a white or yellow variety. Of the red there are some twenty or thirty varieties, but only five or six of the white. Raspberry bushes, or canes as they are usually called, prosper best and bear the finest fruit in a light, loamy soil preferring a damp, shady situation. They are in their prime about the third or fourth year, and continue in perfection for five or six years, after which the fruit begins to deteriorate.

The flavour of the fruit is one generally liked, but it is most fleeting. Even a few hours will impair it; and if the berries be kept for two or three days, the pleasant flavour almost entirely vanishes, and even while on the bush it disappears in two or three days after the fruit is ripe. To be enjoyed, raspberries should be eaten directly they are picked from the bush. As a preserve, the raspberry is especially delicious; other preparations from it, such as raspberry syrup and vinegar, are generally acceptable.

Both the raspberry and strawberry form interesting examples of the nature of fruits from a botanical point of view. The strawberry, which we eat, being the receptacle on which are placed the little yellow fruits with seeds, while the raspberry consists of such fruits, soft and juicy surrounding the hard, woody receptacle—or core—which is thrown away.

As a nectar-producing flower, the raspberry stands well in the front rank, and in many places it forms the main sources of supply. I might quote just one instance: in the *Canadian Bee Journal* we read that Mr. S. D. Chapman, of Northern Michigan, has been keeping bees there since 1881, and has had only one failure. In one year, from eighty-two colonies he took 13,000lbs. of honey, and his average for twenty-six years has been about 100lbs. per colony, and practically all is gathered from the wild raspberry (*Rubus strigosus*) of that district. We have no such great supplies that I am aware of in this country, but there are places such as those in Kent where raspberries are cultivated by the acre, where a good deal of surplus is obtained from this source. On last Whit Monday I was in the grounds of a market-gardener in Notts, where he had about a rood of these bushes, and it was curious to see a bee in about every other blossom. At first sight it appeared like a crop of small blackberries; and the merry hum of the bees was very cheering. So persistent is the attention given by the bees that I have found it difficult to obtain pollen from a flower unless I protected it from their visits.



POLLEN OF RASPBERRY.

The pollen, when taken from the anthers, is almost white, but when packed in the corbicula of the bee is a rather dirty-looking white, and under the microscope it appears of a greenish-yellow hue when seen by transmitted light.

The size of the grains when dry is $\frac{1}{1000}$ by $\frac{1}{1000}$ of an inch, smooth in texture, and oval in shape, with three long flutings or grooves equidistant and running lengthways, as seen at Nos. 1 and 2, one of these grooves being shown at No. 2, and two at No. 1. Of course, the three can never be seen together, as the grain lies lengthwise.

When placed in water, it immediately assumes the spherical form with a large nucleus, No. 3. I believe this is owing to the water penetrating between the inner and

outer pellicle of the grain, the darker central portion or nucleus being the fovilla, to which water has not got access.

In honey, the transition forms are shown at Nos. 4 to 8; most of them being always found. It will be seen how the ovate form, No. 4, becomes almost a triovate, as at No. 5, where the grain is seen from above, near the end. No. 6 shows a pellicle, also endwise, similar to No. 5, but emptied of its fovilla. No. 7, which is similar to No. 3, is also found in honey, the surface of this form appearing in undulations owing, no doubt, to its previous lobed form not being obliterated. In No. 8 we find it in its final form.

When taken from honey it is generally as shown at No. 9, where it will be seen that the processes are further developed than at No. 8. The grain at this stage measures about $\frac{1}{1000}$ of an inch from process to process. It has an almost plain surface with just slight indications of pimples or spines.

(To be continued.)

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

THE CARE OF APPLIANCES.

(Continued from page 475.)

Feeders.—These should now have all been removed from the hives. In the case of slow feeders, the bottle should be thoroughly washed in strong soda and water, after which they should be immersed in a 10 per cent solution of formaldehyde; this will prevent any possible chance of infection. The stages and caps should first be cleaned of all signs of propolis; this is easily accomplished by using a solution of Fels Naptha soap: these, too, should be disinfected with the formaldehyde solution. For effective cleansing the cork strips inside should be removed for washing and disinfection. The caps should then be polished and rubbed with vaseline to prevent rust. The cork strips must be thoroughly dried before being replaced. Where needed new cork should be provided so that all is in readiness for the early spring feeding. In the case of stages having the index numbers stamped on the wood, the figures should be made decipherable by re-inking.

Rapid feeders made of tin should be scalded, even to the wooden float or ring, then disinfected, dried, polished, and finally, rubbed with vaseline. Those made of wood must be well cleansed and disinfected, any defective joints being made good by working pure white lead well into them. In fact, in some cases, it will be quicker and easier to take them to pieces and remake all the joints with white lead. Feeders of both wood and tin require cleansing and disinfecting. All parts must be thoroughly dried before putting together again, and the tin portion treated with vaseline. I find at this time of the year the best mode of drying is to place the articles on the plate-rack in the kitchen for a day, the natural atmosphere is too damp for the work to be done in any other satisfactory manner. When aluminium feeders are used there is no danger of rust, but they must be thoroughly washed, disinfected, and cleaned with the special preparation sold for the purpose.

All tin goods should be repaired; the corners of tin rapid feeders often wear through and leak; the soldering iron brought into use now for stopping up holes and thickening the thin and weak places will save a great deal of annoyance in the busy season. The index fingers on the caps of bottle-feeders often get broken off; these should be renewed. Holes in ripeners or honey tins, caused by nails being driven in when packing or when travelling, should be searched for and stopped.

Dividers.—To get the best results it is necessary to have these as clean and straight as possible. Propolis can be removed by the means given above, and they can be disinfected in the same manner. Each divider must be examined carefully, and any having bent corners must be straightened. Dividers are best made of zinc, as this material is thin and not likely to rust: if of tin they must be dried and rubbed with a vaseline cloth. After they have been treated they should be tied in bundles of fifty, with a board on either side to keep them straight, and stored away in a dry place ready for use. A couple of following boards can be used for tying on either side.

Excluders should be cleaned with a solution of Fels Naptha soap, disinfected, and stored away flat. The work of cleaning the slots is facilitated if a wire brush is used, and for wire excluders it is essential to have one, as the use of anything stronger for scraping is likely to strain the wires: they require extra care in storage for the same reason, for if the wire be strained ever so little the queen will be able to get through.

Metal Ends, when removed from discarded frames, should be cleaned and disinfected in the same manner as other tinned goods, and well dried before putting away. Misshapen ends should be thrown away, the cost of new ones being so small that they are not worth troubling about. Metal ends can be kept from rusting if stored away in dry sawdust.

The knife-heater, and uncapping-tray should not be forgotten, nor the cone-shaped stainers for hanging on the tap of

the ripener. Uncapping knives should also be cleaned, polished, vaselined, and put away; before doing so an inspection of the handles is necessary, for they sometimes work loose; if this happens they will need fastening by plugging the hole with wood and then driving the square portion at the end of the blade home again.

(*To be continued.*)

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of November, 1912, was £1,745.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

DELUSIONS ABOUT BEES.

[8617] Bees have now been studied for so many hundreds, if not thousands, of years that bee-students, both practical and scientific, seem to consider that everything that can be discovered about them has been fully described long ago. The approved method for the bee-journalist or even for the writer of books on bees, is to study what has been written by Aristotle, Virgil, Huber, Langstroth, or some such authority, and to express this in modern English and as picturesquely as possible. This is excellent so far as it goes, but it does not go far enough, and the bees are not always so respectful towards the great authorities as we might perhaps like them to be.

Aristotle stated, for example, that a bee which starts out to gather pollen from dandelions never mixes the dandelion dust with any other pollen. It visits only dandelions during that journey. The idea is excellent. If the bee passed indiscriminately from dandelion to daisy, and from daisy to clover-bloom, there would be danger that monstrous hybrids would be produced. In 1911, I pointed out to a friend of mine, a bookseller, that our bee-students had observed a bee collecting pollen from daisies and dandelions on the same journey. He treated the notion with the utmost contempt. Rummaging among his store he produced a bee-book and read out: "Yet the greatest wonder about all this pollen-gathering is that each separate load has been taken entirely from one species of flower" (Tickner-Edwardes). And Sladen has in *Gleanings* for November 15th, a sketch of a pollen load *in situ* that contained pollen of *three* different colours!

Aristotle was probably quite right in making the general statement. As a rule, one finds that a bee which is working on whin-blossom keeps on at the same kind of blossom but one must not make dogmatic statements on this account. I have potatoes as part of my dinner almost every day. But any higher being that might be observing my behaviour would be wrong to conclude that every human being ingested a certain number of potatoes about 1.30 every day

Tickner-Edwardes and Maeterlinck are very valuable for all that. Most of us have read and re-read their contributions to bee literature. On my copy of "The Life of the Bee," there is written the criticism: "Literary and beautiful. Not always reliable." In cataloguing this book, Root remarks: "Maeterlinck is, to a certain extent, familiar with bee-keeping, but the truth about bees does not interest him so much as the romance of the queen and the drone and the swarming instinct." Yet who can read Maeterlinck's description of the nuptial flight without supreme delight? The mating takes place "in the solitude of the ether" in a "region that is not haunted by birds, that else might profane the mystery." I was fortunate enough just once to see the mating of the queen. It occurred, not in the blue ether, but—on the porch of the hive!

I find that nearly everybody who makes a special pilgrimage to my laboratory to see the bees in the observatories, has become interested through reading Maeterlinck. A book that can catch and hold the attention of so many has a very distinct value; but the enthusiast of the Maeterlinck type is usually content with the statements of his master. He has no desire to learn anything from the bee itself.

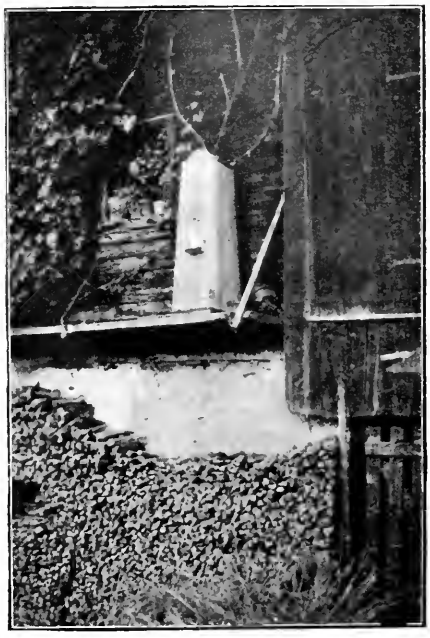
What a bold man was that Sladen, to be sure! He dared to suggest that Cheshire was wrong in his description of the manner in which pollen was packed in the basket. Cheshire, if you please, who knew what was happening inside the bee as it flew from flower to flower! Cheshire, whose drawings appear in nearly all the bee-books. We were almost alarmed the other day, when we discovered a bee with only nineteen hooks to its hind wing. For the

drawing before us was a copy of Cheshire's, and the writer had omitted to add Cheshire's note explaining that the number of hooks varies from nineteen to twenty-two. The drawing showed twenty-two.

I have often been delighted when reading American bee literature to observe the pleasant way in which the Yankee beemen chaff each other, how genially one man will tell another that he is not altogether right. Could we not do a little of this in our own country and island? Would that delightful countryman of mine, Mr. D. M. Macdonald, allow a novice of yesterday to criticise his statements just a little bit?

How long does a worker bee live? The "Guide Book" says six or eight weeks; Langstroth, thirty-five days. I shall not murder Mr. Macdonald's beautiful English by mutilated quotation, but a reference to page 494 of the BRITISH BEE JOURNAL will show that "D. M. M." expects the July bees to live only a month. It is admitted that bees born in late autumn survive till next spring. Now I wonder whether anyone has recently been making experiments to find out just how long a bee will survive. I have not been doing so intentionally, but I had an opportunity this summer of seeing one such experiment made. Here are the particulars as noted in my private bee journal. Mr. Gunn, teacher at Lurebost, hived a swarm of bees on frames of foundation on July 3rd this year. These were the first bees to come to Lurebost, and they were five miles as the crow flies, from any other beehive. I visited Lurebost on September 28th, and examined every comb in the hive. There was a fair number of workers, and a few drones. A number of frames—six, I think—had been fully drawn out and were well stocked both with honey and pollen—unexpectedly well filled, I should say, considering the unfavourable season. There was no drone comb, no queen, and *there had never been any brood.* On October 12th, when I added to this stock a lot of driven bees from Wales there was little perceptible decline in their numbers. One week later I saw the Welsh queen on the comb with quite a number of eggs that she had laid since introduction. It is absolutely certain that every bee in that Lurebost stock was at least three months old, and they had all been born before July came in. It may be urged that the bees, being queenless, had been working half-time. That is true in so far as they had never any brood to take care of, but they had certainly been very assiduous in field work. I have in my possession a little work by a Mr. Walter Chitty, which states, on what authority I know not, that the worker's life is from six to nine months.

The matter may appear of little consequence, but one is not so sure. Other things being equal, it would be a distinct advantage that we should have bees that were longlived. If Mr. Macdonald's June bees live and work only through the month of July, while this Lurebost strain survive till well into October, it would matter quite a lot.



BEEHIVE MADE FROM AN OLD PUMP COVER.

It matters also in another way. I have a good deal of whin in my neighbourhood, and the bees work on it very steadily when it is in bloom. I can see that they are getting pollen, but I would like to know whether they also get nectar. I was delighted, therefore, when Mr. Macdonald wrote: "I consider it does yield some nectar. He does not mention, however, on what grounds he makes that statement. If one could kill a bee that had just alighted on a whin, could dissect out its honey-sac and show that it was empty, could restore things "as you were," and then repeat the dissection when it was about to fly back to the hive, one would be quite sure. Unfortunately this is impossible. My fear is that "D. M. M." may be wrong again.

I am surprised also at Mr. Macdonald's description of the pollen from whin. He says it is "dark, dull and yellow." I have six students just now who have many a time gone with me to see the bees at work on the whin. We would all say that the whin pollen was a *bright reddish orange.* Perhaps the whins in Lewis are different from those in Banff.—J. ANDERSON, Teacher, Stornoway.

CURIOUS AUSTRIAN BEE HIVES.

[8618] When in the Austrian Tyrol last summer I came across these strange bee-hives, attached in each case to the house some 10ft. or 12ft. above the ground, to escape snow in winter. One, as will be seen from the photograph, is made out of an old pump-cover.

Both the photographs taken were in the same village of Uerberach on the Attersee in the Salzkammergut, Austria.—K. M. Hall.

BEE-KEEPERS' ASSOCIATIONS AND THEIR WORK.

[8619] In your issue of December 12th (page 496), an interesting letter appeared under the signature of "A Staffordshire Bee-keeper," and to me the most gratifying feature is that we appear to have one at least, "live" bee-keeper in our Association. Although in accord with many of the writer's contentions, I am sorry he did not go a little deeper into the subject and attack the cause as well as the effect. Perhaps at this juncture an experience of mine during the past season may be enlightening.

AUSTRIAN SKEPS.

At one time a good honey exhibition used to be held in connection with the local Horticultural Society's show here at Lichfield on each August Bank Holiday. This exhibition eventually developed into a one-man affair, with the result that it died out. This year I set about the task of resurrecting the show, and got in communication with our expert, who immediately put his back into the affair in a whole-hearted fashion, with the result that between us we got the local show committee to offer prizes in four classes, and then, to ensure the matter receiving due publicity, I visited every bee-keeper I could find in the district, had a bee gossip with each, and left a show schedule, also an Association leaflet, explaining the object and advantages of membership, &c. In cases where I found bee-keepers who had allowed their membership to lapse, I enquired why, and in most cases the reply was: "The expert did not visit my apiary." I invariably asked, "Did you send the post-card provided for the purpose, asking for a visit?" and in each instance the reply came, "No." Now we come to what I claim to be the cause. One of the first persons appealed to for assistance and practical support by the expert, was a local committeeman and third class expert of our Association, who lost no time in throwing cold water on the scheme by stating he could neither give assistance nor take any part in the matter at all. This you will agree, was, to put it mildly, somewhat disconcerting. However, nothing daunted, I scoured the country for some miles around, and in the course of my wanderings, unearthed two other committeemen. Now, thought I, we are getting a move on, but alas, that was the last I saw or heard of these two enthusiasts. Result: Honey exhibition abandoned owing to lack of support. Now, Mr. "Staffordshire Bee-keeper," I will suggest a remedy: let us see to it that we elect upon the committee men who are not simply content to see their names in heavy type in the annual report, but those who take a real live interest in bee-keeping, otherwise we shall still find "the tail wagging the dog." One other matter I would like to mention is the reported low percentage of disease in this country. Such statements cause one "furiously to think," in face of the following experiences. No less than five out of six keepers of bees, whose apiaries are within flying distance of mine, have had foul brood in their stocks. Fortunately, and by taking protective measures, I have evaded contagion so far. Now I hope we shall soon see the new Bee Diseases Bill in operation, welcomed by none other more heartily than—E. Jacques, Lichfield.

[Of course, it is in the hands of Associations to elect on their committees only "live" men—those who are worker bees, not drones. Otherwise the Associations will be a failure. We cannot see why a bee-keeper who joins the Association should be asked to send a card to notify the fact that he wants a visit from the expert. The very reason why he joins the Association *is* that he may have the expert's visit, and is the main inducement held out to him to join. Also, the work of an expert engaged to carry out a tour is not only to visit subscribers but also to visit those bee-keepers who are not members and get them to join. We fail to see

how he can do this if it is necessary to send a card before even a member can obtain a visit.—EDS.]

THE DISEASES OF BEES BILL.

[8620] I should like to say a little about your comments on my letter in your issue of 28th Nov., page 476. Why do you assume that, because a man does not belong to any association, he is necessarily an ignorant or a careless bee-keeper? If so, over ninety per cent of us are.

Men who can stand alone generally compare favourably with those who need assistance! Why "*must* it be admitted that visiting experts have done so much to diminish foul brood"? And, if so, why apply for further powers? If it has been reduced to three per cent among members of associations, why not carry such a good work further? What need have we for legislation?

The junior editor of the "B.B.J." advertises an infallible remedy for brood diseases; and in your professedly philanthropic journal, you print advertisements from persons claiming to be able to control "Isle of Wight" disease. What more is needed?

In my experience, the people who do not permit experts to visit their bees are quite ready to accept help and advice from competent men. You *assert* rather than prove that we are backward because we lack legislation. You *assert* that there is ample evidence of the benefit of legislation. But assertion is not proof!

You are distinctly disingenuous in suggesting that I am not aware that bee diseases are caused by micro-organisms. That is admitted; but there are many things contributory to trouble among bees besides bacilli. The particular microbe blamed by European investigators is proved harmless by American scientists. There *is* ample room for investigation—not only among germs—but into the effects, if any, of spraying trees and plants, of tarring roads, of alterations in farming methods, of climatic conditions, of the introduction of foreign races, and of ill-advised interference with nature.

I say that you claim for yourselves and your "experts" much greater knowledge than you possess—simply because you and they have never undergone the somewhat humiliating process of finding your level on a bee-farm. There, to be successful, you *must* be able to handle bees and cope with their diseases.

Yet again, I consider your remarks about the "B.D.B." disingenuous. You say that it is within the power of the Board of Agriculture to prevent the importation of honey and wax, but that the Bill does not authorise them to forbid the use of skeps or of fixed comb hives. The truth is that the bill is so widely drawn as to leave it to the Board of Agriculture to settle what shall or shall not be done. They can do as they like. I fail to see in the Bill any proof of *any* care for the interests of the cottagers on the part of the promoters. It is certainly well known that the majority of "experts" clamour for such an order as the prohibition of fixed comb hives. They have already got their way in some countries—in New Zealand, for instance.—C. B. BARTLETT, Witney, Oxon.

[Our correspondent is entirely wrong, for we have never assumed that because a man does not belong to any association he is necessarily an ignorant bee-keeper, but we do know, and it has been stated *ad nauseam*, that there are among them many such which cannot be reached by experts or anyone else. Mr. Bartlett's experience has evidently been limited, and if he had a wider acquaintance with bee-keepers, beyond his small home circle, he would know that the work cannot be carried further without compulsory powers, and that there are people who will not even take the advice of competent men. The junior editor does not advertise an *infallible* remedy for brood diseases, and how does our correspondent suppose remedies are to be tried if persons introducing them are not allowed to advertise them. His case must be feeble if he has to bring such an argument forward as a reason against legislation. If he will refer to back numbers of the "B.B.J." he will find plenty of proof of the benefits of legislation. We have, from time to time, reported what has been done in other countries, and if that is not sufficient proof we can only say "who so blind as he that will not see?" It is a pity that our correspondent displays such petulance, and uses so offensive a term as "disingenuous," particularly as we did not suggest that he was "not aware that bee diseases are caused by micro-organisms," but from the way he writes it is evident that he has a great deal to learn with respect to them. But what spraying trees, tarring roads, and alterations of farming methods have to do with bee legislation, we fail to see.

No doubt, in another thirty years' time what we now know about bacteria may have to be revised, as a natural progress of science.

We do not claim for ourselves or our experts greater knowledge than we possess, nor do we pretend to be infallible, and are always ready to learn, but if it is necessary to undergo the process of finding our level on a bee farm to be rude and offensive, then we are glad that we have not descended to that level. As for the experts which our correspondent belittles, they are quite as capable of managing bees as a bee-farmer, and many of them are not

only large and successful bee-keepers, but are also quite able to cope with bee diseases.

As we happen to know what the Board of Agriculture intend to do, and our correspondent evidently does not, we do know that there is no intention of doing away with skeps. That the majority of experts clamour for the prohibition of fixed comb hives is pure imagination, and shows how weak the case is when it has to be supported with such statements. As our correspondent wished his comments to appear as written, we make no excuse for the publication of his letter, although we regret that it should have been written in so offensive a strain. That there is an overwhelming demand amongst bee-keepers for legislation there is no doubt, and we trust that their hopes that the Bill will soon become an Act will be realised.—EDS.]

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

One View of the Matter (p. 448).—I fail to understand why there should be doubt as to whether the compound eye of a bee receives one image or thousands. We ourselves have two eyes yet see one image, and even admitting that we have directing and focussing ability, we do not see exactly the same field with each eye. There are other animals whose eyes are placed on opposite sides of the head, and we do not imagine that they see other than as we do. But apart from this, it is inconceivable that the insect selects the right view from the thousand-and-one impressions, for those impressions complete the field, and if the images did not coincide the result would be an overlapping chaos, and we should hardly receive the stings we do, on account of the difficulty of decision as to which of our many images should be stung.

Mendelism and Bees (p. 453).—

We have ranged the world to find
The perfect bee (that's in our mind),
  Which shall never need the slightest puff
    of smoke;
Which shall cap its honey white,
And fill all the sections (quite),
  Nor prove to be a porker in a poke.

But we haven't hit upon it,
It remains within our bonnet—
  And we don't see how to try Mendelian
    schemes;
Still, some genius may arrive
Who'll apply them to the hive,
  And give us the fulfilment of our dreams.

We should hail the man as King
Who removed the horrid sting,
  To the gratitude of predatory bears,
Or he might dilute the virus
So that stings no more would fire us
  With a longing to explode in awful swears.

We'd produce the bee's antennæ,
To increase its senses many;
  It should tell us when the section rack was
    stored:
Or we'd teach the bee to bring
The ripened honey on the wing,
  And to place it on the hospitable board.

We might train the lazy drone
To defend the Royal throne,
  And to feed the screaming beelets in the
    comb,
Whilst the worker spent the hours
'Mid the sunshine and the flowers,
  Bringing extra loads of harvest to the
    home.

We might even stretch its trunk,
Till the nectar could be drunk
  At the bottom of the honeysuckle tube;
We'd enlarge the honey sac,
And reduce the pollen pack,
  Till our profits we might square, or even
    cube.

We would thicken up the chitin,
Till it spent the winter's night in
  All the comfort of a happy summer's day;
But we haven't got there yet,
So our plucky little pet
  Must still go on the same old struggling
    way.

And perhaps it's just as well,
For it's difficult to tell
  What would happen, could we make these
    alterations;
Jones and Brown might disagree
In the making of a bee
  Which would satisfy their highest aspirations.

Honey might become so cheap,
We should have the lot to keep,
  And when nobody would buy it for their
    tea,
We should rise up in our wrath
To cast the scoundrel forth
  Who applied Mendelian methods to the
    bee.

Notes on Pollen Collecting (p. 463).—

There once was a hard-working bee
Collecting some pollen for tea;
  But her legs, heavy-laden,
  Were noticed by Sladen,
And that was the end of that bee!

Virgil's Bee Flowers (p. 483).—However much the dark-coloured honey of the pines may have been appreciated by the Romans, and however useful the propolis to their type of hive, modern bee-keepers are inclined to favour some other tree as a windbreak. It is to be hoped that "D. M. M." will give us some more of these extracts, and perhaps he will accept the suggestion to use the conventional indication of quotation, to spare us the shock of sudden transition to an older diction. What delightful reading this book of the old bee-master makes! One can but regret that it did not appear in the same fascinating light when it was a part of a duty rather than a pleasure. But that is perhaps a very trite reflection upon human nature itself. Now, instead

of roundly wishing that Virgil's Cæsar *et hoc genus omne* had never lived to be put to the base uses of "impots," and such-like vehicles of dishonour, one sighs for a walk with the old master in his bee-garden, and the delight of unfolding, by the aid of a modern hive, some of the mysteries which remained unsolved until blind Huber's day.

Queries and Replies.

[8572] *Obtaining Experts' Certificate.*—I do not often trouble you with queries, as I so frequently find answers which meet my difficulties in your replies to other correspondents, but I should be very grateful if you can assist me in the following matter:—I have obtained my second-class certificate for proficiency in bee-keeping, and I am desirous of taking my first. Naturally, I should like to stand as good a chance as possible, and being only a working man, I cannot afford to carelessly spend money. I have the following books: Cowan's "Guide Book" (Coronation Edition); "The Honey Bee: Preparing, Producing, &c."; "Waxcraft"; also most of the smaller books issued by you. I have read a "Modern Bee Farm" and the "Lore of the Honey Bee." I propose also getting the "A.B.C. and X.Y.Z. of Bee-keeping." I have twenty-two stocks of bees myself, and have charge of two other apiaries (upwards of 100 or more hives). I have reared queens, and done most of the other manipulations, such as removing bees from houses, packing bees, and have sent them safely as far north as mid-Scotland, in good condition. Is there anything I have missed, and could you tell me on what points to specialise, or what would be required of me to pass? With the compliments of the season, and speedy passing into law of that much and badly wanted Bee Diseases Bill.—R. Litman.

Reply.—From what you tell us we should say you stand a very good chance of passing in the paper work section of the first-class examination. You might add Cheshire's "Bees and Bee-keeping" (Scientific, Vol. 1) to the list of books you are studying. A general knowledge is required and it is useless to specialise. Most candidates consider that the severest test is the lecturing. You must show that you are able to impart to an audience in a clear and lucid manner the knowledge of bee-keeping you possess.

[8573]. *Rendering Old Combs.*—As I have a considerable amount of old combs and scraps of foundation left over from last season, will you be good enough to let me know the most suitable way to melt them down? I have not got a wax extractor.—Novice, Carlisle.

Reply.—As you have no wax extractor, the best plan will be to tie the combs and scraps of wax into a bag made of some coarse material; put this into a copper of water, weighing it down with a heavy weight to keep it below the surface. Boil the water and the wax will rise to the top and can be skimmed off. It is not a very satisfactory method, as a good deal of wax will be left in the bag. If you could squeeze this by some means while in the hot water it would be an advantage.

Notices to Correspondents.

E. J. (Lichfield).—*Honey Trophies.*—(1) We should have been pleased to give an illustration of the first prize Trophy at the Grocery Exhibition, and had taken a photograph for the purpose, but, unfortunately, the negative was accidentally broken before we had taken off a print. (2) Bee-keeping, as carried on in this country, is on too small a scale for any special system of book-keeping to be required, and the bee-keeper usually adapts the principles of the art to a system suited to his own requirements.

Glamorganshire—*Sending Bees by Rail.*—You should communicate with the Secretary of the Sussex B.K.A., Mr. C. A. Overton, Beecroft, Crawley, who will no doubt be able to assist you in the matter.

Honey Samples.

J. B. (Cheltenham).—(1) The sample is genuine New Zealand honey. We recently had some honey from Auckland of similar flavour and quality. (2) The other sample is neither mead or vinegar, the best answer we can give to your question is to advise you to purchase "Mead and How to Make It," and "Honey Vinegar," both by G. W. Bancks, and by carefully following the instructions given therein you will succeed.

W. A. H. (Ashby-de-la-Zouch).—Your sample is a nice light honey of good density and flavour, but poor aroma. It is mainly from clover, and is worth 1s. per lb. retail.

Suspected Disease.

A. H. W. (Finchley).—The bees have died from "Isle of Wight" disease.

Constant Reader (Hastings).—Your best course will be to destroy the stocks, as they are affected with "Isle of Wight" disease. Nothing can be done to save them now.

H. D. (Crayford).—There is no need to send on the queen. The bees have died from "Isle of Wight" disease.

Jumbo (Knutsford).—The bees were so messed up with the honey put in the box, that we were unable to examine them.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, December 19th, 1912. Mr. W. F. Reid presided for a portion of the meeting, and upon his leaving on account of another important engagement, Mr. J. B. Lamb was voted to the chair. There were also present: Sir Ernest Spencer, Messrs. E. Watson, J. Smallwood, A. G. Pugh, A. Richards, E. Walker; Association representatives: G. J. Flashman (Barnet), J. C. Roberts (Mid-Kent), J. Tinsley (Staffs), and the Secretary, W. Herrod.

The minutes of the previous meeting held November 21st, were read and confirmed.

Letters expressing regret at inability to attend were read from Miss M. L. Gayton, Messrs. T. W. Cowan, T. Bevan, C. L. M. Eales, Tickner Edwardes, J. Price, Colonel H. J. O. Walker, and Captain Sitwell.

The following new members were elected:—Mrs. H. Marshall, Mrs. H. H. Woosnam, Miss E. Praetorius, Miss A. Sinclair, D. T. A. Sellar, Mr. L. Andrews, and Mr. J. R. Craik.

The Crystal Palace Association applied for affiliation and was accepted.

The report of the Finance Committee was presented by Mr. Smallwood. The payments into the bank for November amounted to £45 9s. 9d. The balance at the bank at the end of November was £220 14s. 1d. Payments amounting to £28 12s. 6d. were recommended.

Messrs. A. Richards, J. N. Smallwood, and F. Kenward lectured before the Council for the first-class certificate and all succeeded in passing the test.

Next meeting of Council, January 16th, 1913, at 23, Bedford Street, Strand, London, W.C.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

VISION OR VISIONARY?

[8621] Has your correspondent, Mr. W. Hampton (page 494), any idea when the obliteration, of which he speaks, takes place? Suppose it to be at the moment each bee of a swarm leaves the parent hive, surely the bees would be in an awkward predicament if after flying some little distance, they were to discover that the queen was not with them.

In addition to their natural instinct, few would deny to bees some slight degree of intelligence—including a somewhat short-lived memory—sufficient to account for most of their doings.

Is it so certain that we must attribute the homing instinct in bees to something of which man has no knowledge? Travellers record instances of apparently the same instinct in certain races of the human species, and I am inclined to think that highly civilised man leans on artificial aids to such a degree that he has almost entirely lost this faculty, along with much else worth retaining.

Mr. Hampton's theory would explain how the insect finds its way to and from a field of sainfoin which it has visited ever since it commenced to fly, for it would take up a full load practically upon the spot where it alighted and would naturally take the same road home with or without reference to its supposed plan of the route. Suppose now, the sainfoin to be cut down and for the time being there is no other breadth of forage available. Further, suppose our bee to set out in a direction new to itself, and in the opposite quarter to its accustomed flight. It alights on a flower half-a-mile away, may be. There is little nectar to be obtained, and it spends much time visiting many flowers and wandering, perhaps, far from the line of flight on which it set out. It concludes it may just as well be at home, and rising in the air it sets off thither. Does it consult the suggested plan and retrace its flight in detail? Or, being well acquainted with Euclid I. 20, does it take the usual bee-line instead?

It would seem that Mr. Hampton, like myself, does not find the text-books very convincing in dealing with the sense of sight in bees. Cheshire considers the lenses of the compound eyes to form a stereoscopic image. Mr. Cowan does not express a personal opinion, but states that Müller's theory of an image in mosaic is now the generally accepted one.

It appears to me that either way would produce the same image of what lay in front of the eye, but there would be a great difference in the brilliance of the images.

Since lights from each point in the object would be grasped by many hundreds of the individual facets instead of by one only, according to the mosaic theory of Müller, as explained in "The Honey Bee," second edition, page 102, it follows that the stereoscopic image would be many times the brighter.

Supposing the compound eyes to be used for distant vision, it is just this light grasping power that is required as opticians strive to increase the aperture of

objectives, thereby obtaining greater resolving power. Optical instruments require the image to be eye-pierced for visual work, but in insects an equivalent might be found, possibly in increased sensitiveness of the nerves conveying the impressions and thus the bee would be naturally provided with an effective pair of binoculars. Again, if the image be in mosaic, injury to individual segments of the eye would spoil the pattern, and so would pollen grains falling amongst the sensory hairs for the time being. These same hairs are probably no more seen by the mind of the bee than are our own respective noses when we cast our glance downward.

Lecuwenhœk's experiment proves nothing, nor does the one with the cones in position. But I should expect in the latter case, supposing each corneule and its cone to form an image at all, that that image could be caught by a suitable objective and magnified so as to show all details, and thus prove whether the image (if one) be stereoscopically formed or no.

It would require the most absolute proof to convince us that such an elaborately constructed organ was sensitive to colour only.

But such eyes giving telescopic sight would be ill adapted for near vision, and as in our own eyes there must come a point within which clear vision without artificial production of aperture is impossible and hence, as Mr. Hampton says, supplementary eyes—the ocelli—are necessary. But why three of them, unless to guard against incapacitation resulting from possible injury to an only eye? Probably, from their position the drone could lose one or two ocelli without very serious inconvenience, but should any accident happen, in the case of the worker, to the frontal ocellus, it might be placed at a disadvantage. I do not propose to do anything so cruel as to experiment in this direction. I should say the compound structure was necessary for strength and that the general arrangement was such that the greatest possible amount of light was grasped by the cornea, and that all or practically all was utilised in image formation (if one), very little being absorbed by the pigment cells.

I am fully aware that there is no absolute proof in all this, but were we compelled habitually to seek our food as does the honey-bee, I can think of no organ better adapted to serve our end than one giving such vision as I have described.—G. M., Northants.

WAS IT "ISLE OF WIGHT" DISEASE?

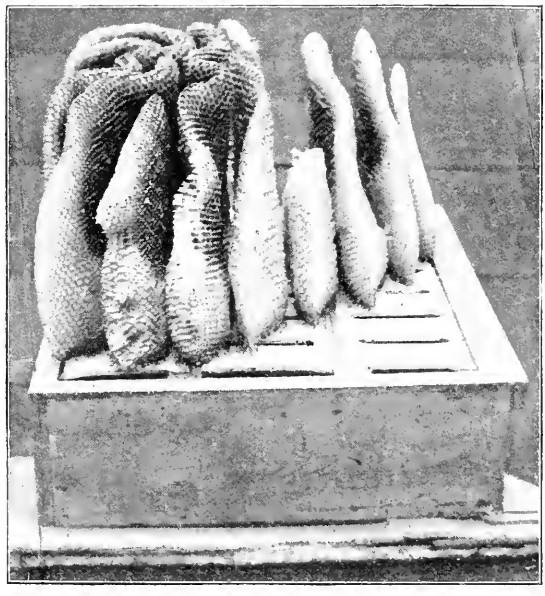
[8622] Mr. J. Pearman says on page 495 of last week's "B.B.J.," "I have not seen many stocks affected with this malady ("Isle of Wight" disease), but quite enough to be sure that I could not mistake it." I should have liked to see an editorial comment on that statement. A few weeks ago there appeared in "B.B.J." a humorous recital of someone's bee-keeping woes, in which the writer described the hated crawling symptoms and went on to say that the bees sent to Cambridge were found not to be affected with *the* disease. I suppose it is quite certain that bees sometimes crawl with dislocated wings and die out without having had *microsporidiosis*.

Let me describe my own fate this summer, and ask Mr. Pearman for his verdict. I had six nuclei made from two hives, two of these I placed apart because they had not done well, and I thought they had dysentery. Of the other four (all standing in a row) the first headed by one of the old queens was splendidly strong by about the end of June, and then I found a great mass of dead bees on the floor-board and pouring out of the hive. (I had only been able to visit them at odd week-ends). There were ten frames absolutely thronged with brood, and I began by burning five of these (almost with tears). Then I found that there was no honey in the hive and, putting the calamity down to starvation, I gave the stock all the food I could, which consisted of only one frame. Most of the live bees were out on the herbs near the hive sitting there and crawling, but not flying, and the moment the new frame of honey was placed in the hive they started walking home in a crowd.

"Mad," I hear Mr. Pearman say, but I had looked in the Board of Agriculture report and found this: "abdomens greatly distended, and containing a large amount of ropy yellowish-brown matter." The excrement of my bees was quite watery and bright yellow. It was a little discrepancy, but it saved (?) the bees. Hardly was my back turned, I think, when the remnant, having eaten its comb of honey, swarmed out. It discovered the use of its wings and removed about three hundred yards, and was, I feel sure, the little lot picked up by a neighbour about noon that day. It was fed, and I believe still lives. The other three hives in the row took the disease and finished dying about October. My remaining two stocks, deemed less healthy than these, are in the same garden about eighty yards away and still live, one of them showing a few crawling bees at the time of packing down. The real difference between these two hives and the other four is, I feel convinced, that the former are propped up just too high for crawling bees to get back into them. Though the disease was evidently in the village before I came, I think with your permission I would prefer not to give my name to this communication but enclose my card.—Nosema.

A STOCK WITHOUT FRAMES.

[8623] The enclosed photograph may be interesting to readers of the "B.B.J." The section rack was taken off a hive at Isleworth. It appears that a neighbouring hive swarmed and a bee-keeper (?) was called in to hive it. The swarm was captured and placed in a hive with no frames, the idea being that the bees would adopt the section-rack as the brood-nest, with the accompanying result. Luckily, I had my camera and secured a picture. It should be understood that the section-rack was inverted to take the photograph.—A. WAKERELL.



RESULT OF HIVING SWARM WITHOUT FRAMES.

SURPLUS FROM STOCK WHICH HAS SWARMED.

[8624] As surplus from a stock which has swarmed twice apparently is unusual ("B. B. J.," page 298 and 320), I think the following might be interesting to fellow bee-keepers. Perhaps others may be induced to give their experience.

In answer to your comments on my inquiry (page 320), I am quite certain both the swarm and cast came from the same hive, as I was within two yards of the hive at the time when each of them issued. The stock swarmed on May 27th, and a cast came off on June 6th. From the parent hive I took off a super of shallow frames, which contained 23lbs. of extracted honey, and on August 11th I took off a second with 7lbs. of honey. The frames were fitted with starters only, and the two sets were nearly completed. The swarm gave me a super of 18lbs. of honey on August 2nd. The cast did not give any surplus, but it has built out nine frames of comb from starters, and stored enough honey for winter, and is as strong a stock as could be desired.

This is not the first time that I have had surplus from a stock which has swarmed twice, for in 1911 I had 12lbs. surplus from a hive, the cast from which is the stock which gave this year both swarms and surplus.—BEGINNER, Bletchley.

SENDING HONEY BY PARCELS POST.

[8625] With reference to the letter from your correspondent, 8614 (page 496), I should like to point out that his complaint is only one of a great many similar ones that must have gone to the Government from all over the country regarding the use of bags in lieu of hampers in the parcels post. The Government have, in consequence, taken action, and the hampers are coming back again. I was informed yesterday that orders had been placed for 4,000, and that as soon as ready they would be put into use.—R. L., Castle Cary.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Braula Coeca.—A correspondent of *Gleanings* reports: "I had a colony with many bee-lice. One evening I shoved a piece of camphor under the bottom bars upon a pasteboard. Next morning I drew out about two hundred bee-lice, dead, with no harm to the queen or bees." That is worth trying, even if you get only two deaders.

Mild or Virulent.—In a recent issue a correspondent brought an accusation against scientists in America, on the Continent, and at home because they formed so many "types" of foul brood. Mr. Crane, an extensive apiculturist and a man with an extended experience of inspection, wrote thus: "I am not surprised at the great variety of opinions in regard to foul brood, for there appears to be a great difference in the virulence of the disease in different localities, and even in the same locality in different yards. Sometimes even in the same yard one colony appears much better able to cope with the disease than another."

A Blessing in Disguise.—"There is surely a bright and hopeful side even to the question of brood and other bee diseases. For me battling with it has made me more careful of my bees, and the warfare has resulted in bees that are vastly superior to the old stock—superior in wintering, in handling, in honey-gathering, in general vigour. What at first appeared to be a calamity is turning out to be a money matter. As a result of it the apiculturist of the future will be a *bee-expert* instead of a mere bee-keeper. If so, it may be a blessing in disguise." The idea is a good one. The bee-keepers of the future will not be content simply to keep bees, they will make it their business to acquire the requisite knowledge necessary to manage their apiaries on the most advanced lines, and make the very best and most of their bees.

Honey-dew.—Dr. A. Heinz, University Professor, Agram, says the *American Bee Journal*, reports: "Honey-dew is produced if unusual increase of transpiration is excited by strong light on leaves growing rapidly, and not too old, and high concentration of the sap is induced." Another writer adds: "I have also frequently observed on young lindens, upon which few plant-lice were to be found, that the drops which are supposed to be sprayed upon the leaves by these insects were numerous upon the uppermost tender leaves, where no lice were to be found."

How Far can Swarms Travel?—A summary in a leader in above paper gives what are considered authoritative statements that various observers have certified that swarms have travelled five miles, eight miles, ten miles, and one "tall" authority says twenty-five to thirty miles. Another naively adds to this: "We will soon have them crossing the Atlantic!" Mr. Dadant himself has never been able to determine by personal observation how far a runaway can fly, although in his "sprinting" days he has often made a bold attempt. "From all this we conclude that it is useless to try to establish an exact limit to the possible flight of a swarm."

Queries and Replies.

[8574] *Foodless Stock in December.—Channel Islands for Bee-keeping.*—I shall be much obliged if you can give me any reason for the following occurrence, in your BEE JOURNAL of next week:—In September I fed each of my four stocks of bees with 14lb. to 15lb. of syrup. During October they were all gathering honey and pollen, and continued gathering the latter in large quantities all last month. At the beginning of October I had a new queen given to me, which I introduced into No. 1 hive, by Simmins's direct method, and she was well received. About a week ago I noticed a good deal of agitation in this hive, and several dead bees lying about. The agitation and the dead increased daily. My other three hives were quiet, only a few bees going in and out, so I knew it could not be robbing. On the advice of a friend I gave the stock a cake of candy, and was struck with the lack of warmth in the hive when I did so. The deaths then ceased immediately, and so did the excitement. The weather being so mild here (Channel Islands) I removed the quilts and peeped between the frames. I found this No. 1 hive had no food at all, while the other three had a large quantity of stores left, No. 4 having hardly eaten any. I am now feeding the starving stock rapidly with thick warm syrup (1½ pints in twenty-four hours), which the bees are taking down as quickly as they did in the autumn. Can you explain why one hive should have consumed all its stores and the other three have a great part still left?

The Channel Islands ought to be a Mecca for bee-keepers who understand the proper management of bees. "Isle of Wight" disease is unknown, and there is hardly any foul brood (at any rate, in Guernsey), and I believe it is the same in the other islands. There is a large fruit crop in spring and ling on the cliffs in autumn. There are no cold winters to contend with, and bees start work earlier and work later than they do in England. Notwithstanding this, there are very few bee-keepers in the island, and with one or two exceptions, scientific bee-keeping is unknown.—A BEGINNER, Guernsey.

REPLY.—There is no doubt that breeding continued very late in No. 1 stock, and this will account for the stores being used up. You should have given candy and not syrup at this time of the year. If cold weather comes along the latter will probably cause dysentery.

[Owing to the Index occupying so much space in this week's "B.B.J." we are obliged to hold over several important articles, queries, &c., until our next issue. —EDS.]